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A

TREATISE

ON THE

KNEE JOINT.

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A TREATISE ON THE MORBID AFFECTIONS OF THE *KNEE JOINT*,

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THE object of the following treatiſe is to give an account of the principal diſeaſes of the knee joint. It is not however meant to include an account of thoſe injuries which depend upon the fracture or diſlocation of the bones, or of thoſe morbid affections which ariſe from aneuryſms of the popliteal artery. For although caſes of this kind be of frequent occurrence, and great importance, yet, as they are not neceſſarily connected with the diſeaſes which

which are the ſubject of this treatiſe, they may be conſidered apart from them.

As the obſervations have been ſuggeſted to the Author chiefly by experience, they will ſerve either to confirm the pathogical and practical doctrines of others, or to eſtabliſh points which have not been ſufficiently inveſtigated and aſcertained before.

The plan of the arrangement is in ſome meaſure modified by the line of facts and obſervations which have occurred to the Author in the courſe of his practice. As it was natural, that the caſes which came within his own immediate notice ſhould make a more forcible impreſſion on his mind, direct his attention more particularly to thoſe branches of the ſubject in which they were comprehended, and conſequently

ſequently lead him to explain them at greater length than what their relative importance may ſeem to require. The inconvenience, however, which ariſes from any diſproportion of this kind is not great, and is fully counterbalanced by having nothing advanced as a fact which is not the reſult of experience, and no doctrine ſupported which the Author has not had repeated occaſion to conſider. His chief object was to make the treatiſe uſeful, and it therefore begins with the hiſtory of a few ſimple caſes, in which the progreſs was different from what the origin gave reaſon to expect.

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A

TREATISE, &c.

CHAP. I.

SUPERFICIAL INJURIES.

MORBID affections of the Knee Joint exhibit a greater variety of appearances than the morbid affections of any other joint of the body. They are in general more ſevere, more tedious, and more difficult to manage. Upon this account, they conſtitute a very important claſs of caſes, which require to be treated with the

utmoſt care and attention, under whatever form the particular attack may appear. For the delicacy of the knee joint is ſuch, that external injuries, which would not prove of a very ſerious or alarming nature in other parts of the body, are followed by the moſt diſtreſſing and dangerous conſequences when inflicted upon the knee, where they often prove incurable, and ſometimes even fatal. The moſt ſimple and ſuperficial of all injuries, thoſe which penetrate no deeper than the ſubſtance of the ſkin, without affecting the more interior parts of the joint, are not entirely excluded from this deſcription of caſes. For, although they do not all terminate unfavourably, yet a much greater proportion of them go wrong than what one ſhould expect from the nature of the injury. I have met with different inſtances of this kind in caſes of extenſive burns on the anterior part of the knee, and of lacerated wounds which tore off and ſeparated the ſkin from the ſubjacent parts. The ſurface of the burns might be five or ſix inches in diameter; and, although they were not deep,

deep, yet they were ſufficiently ſevere to deſtroy the texture of the ſkin completely, which came away in ſloughs, and thus deprived the ſubjacent parts of their natural covering and protection. The uncovered parts conſiſted chiefly of tendons and ligaments, which are not of a nature to granulate kindly, nor to promote the formation of new ſkin. The cure was therefore protracted to a great length of time, and the ſore became exceſſively painful, as the parts, now ſubjected to irritation, poſſeſs the higheſt degree of morbid ſenſibility when under the preſſure of diſeaſe. In this ſituation of circumſtances, the cure became ſtationary, and the diſcharge of purulent matter from the ſurface of the ſore increaſed in quantity, till at laſt the duration and ſeverity of the pain, together with the copious diſcharge of matter, excited an attack of hectic fever, which gradually undermined the patient's ſtrength, exhauſted the ſubſtance of his body, and reduced him to an irrecoverable degree of weakneſs, ſo that, after languiſhing for a time in this condition,

dition, he ultimately ſunk under the continuance of his diſtreſs.*

To the ſame claſs of caſes belong thoſe accidents in which a large portion of ſkin is ſeparated from the ſubjacent parts by the violence of a wound or contuſion. For wherever the ſeparation of the ſkin is ſo extenſive and complete as to denude the ligaments of the joint, the patient muſt encounter much danger and diſtreſs before he can expect to recover. And under circumſtances ſo unfavourable, it is always doubtful how far a cure is attainable. Becauſe whatever difference may ſubſiſt between the nature of the original injuries, yet after the ſkin

* I purpoſely wave the diſcuſſion of any queſtion concerning the advantage to be derived from performing amputation above the knee joint in order to ſave the patient's life, by the removal of the diſeaſed parts, as the inveſtigation of this ſubject opens a field of inquiry, which will be introduced with greater propriety in a ſubſequent part of this diſſertation.

ſkin is once deſtroyed or removed by any kind of accident, and the parts beneath expoſed to irritation, and brought into a ſtate of inflammation and diſeaſe, the progreſs of the caſes is nearly alike. An unhealthy mode of action ſupervenes, by which the wound naturally degenerates into an ill conditioned ſore, with little tendency to heal, and which therefore proves a perpetual ſource of diſturbance to the conſtitution. After this manner, a lacerated wound of the ſkin on the knee is converted into a ſore, ſimilar in all its eſſential circumſtances to what an extenſive burn produces, and which in time induces a ſtate of hectic fever, and is at laſt followed by a ſimilar train of unhappy conſequences. I give this deſcription from a caſe which fell under my own obſervation, and in which the violence of the original ſymptoms were aggravated by the inſinuation of foreign matter, ſand and gravel, into the ſurface of the wound. This unlucky circumſtance neceſſarily excited additional irritation, and thereby aggravated

gravated the ſeverity of the accident. Though, independently of this accidental cauſe of aggravation, caſes of this kind are always exceedingly alarming and dangerous. As the ordinary progreſs and termination of extenſive lacerated wounds about the knee joint is unfavourable, there is much ſatisfaction in obſerving the great and unexpected exertions which nature occaſionally makes to preſerve the motion of a limb under the moſt unpromiſing circumſtances.

A very memorable example of this occurred in the perſon of a young lad, about fourteen years of age, who had a large portion of ſkin torn from the anterior part of his knee.

This ſkin was ſo much bruiſed, that no union took place although the ſurfaces of the wound were immediately applied to each other in the moſt accurate manner. By the failure of this attempt, all the ſubjacent parts were left bare and expoſed. But the young

young patient being of a ſound conſtitution, and the parts in a healthy ſtate at the time, the whole ſurface of the wound was ſoon after covered over with a crop of vigorous granulations, excepting that part which correſponded to the ſurface of the patella, from which no granulations ſprung. For the patella had ſuffered too ſeverely by the accident to be capable of recovering its ſtate of health, or even of remaining alive, and, therefore, it never could ſerve as a baſis to ſupport the growth of new parts. The effects of the injury upon the patella were daily more and more manifeſt, till in progreſs of time it became completely dead; and, loſing all connection with the ſurrounding living parts, it was at laſt completely detached from them, and thrown off from its natural ſituation. The proceſs of ſeparation however was conducted ſo ſlowly, and accompanied with ſo moderate a degree of inflammation, that the cavity of the knee joint did not ſeem to ſuffer any material irritation, from the expoſure which the removal of the patella occaſioned.

caſioned. The dimenſions of the aperture, which was formed by the ſeparation of the patella, did not exceed the ſize of a ſixpence, as the ſubſtance of the bone had been much ſhrunk and waſted previouſly to its final ejection. No conſequential bad ſymptoms took place; on the contrary, the granulations continued healthy, grew luxuriantly, and thoſe which ſurrounded the margin of the opening approached towards each other, and had nearly met at the center, and cloſed up the opening completely, when the patient was unexpectedly ſeized with an attack of hoſpital gangrene, which ſoon blaſted every hope. For the whole ſurface of the ſore was included in the attack, and exhibited every ſymptom of malignancy which characteriſes this ill-conditioned and untractable ulcer. It is unneceſſary to follow the particular progreſs of the caſe after this period; for, although the appearances underwent ſeveral changes, yet, upon the whole, the ſymptoms got gradually worſe, till their ſeverity at length put an end to the patient's life.

The

The whole hiſtory of this caſe is exceedingly intereſting, and affords a moſt inſtructive leſſon in practice; for, although the ultimate termination was unfortunate, yet the advancement towards a cure was ſufficient to prove the poſſibility of the event, had not the unfortunate acceſſion of hoſpital gangrene fruſtrated the ſanative efforts of nature.

CHAP. II.

INJURIES UPON THE BURSAE BELOW THE PATELLA.

THERE is another ſpecies of injury which leads to difficulties of a different kind, and, although it is not accompanied with danger, yet it always proves troubleſome to manage, and is frequently the ſubject of miſtake. It occurs when a blow is received upon the knee joint, over the region of the burſa belonging to that tendon which connects the patella with the tibia. A tenſe, diffuſed, inflamed, painful ſwelling ſoon ſucceeds, as is uſual after ſuch accidents. The appearances and conſiſtence of the ſwelling does not undergo any remarkable

remarkable change for a day or two; but then, after the general intumeſcence has begun to ſubſide, and the violence of the inflammation to abate, a tumor remains which is more circumſcribed in its form at the baſe, and more prominent at the center; and, in a little time, this central prominence becomes ſoft, poſſeſſes an obſcure fluctuation, and exhibits unequivocal ſymptoms of containing a fluid. The original appearance and progreſs of the tumor may eaſily lead one to the inference that the fluid contained in it is purulent matter, formed in conſequence of ſuppuration, as the hiſtory of the ſymptoms correſponds perfectly with what is expected to be met with in a caſe of common phlegmon. The inference, however, will not be correct, if there be a poſſibility of the ſame train of ſymptoms proceeding from a different cauſe. And, in the inſtance now under conſideration, this actually is the caſe. For a preternatural accumulation of fluid in the burſa may produce ſimilar appearances when it is connec-

ted

ted with an inflammatory lymphatic effuſion, which forms a hard and circumſcribed baſis to the tumor; and, if a practitioner be not aware of this variety, he may readily commit a miſtake in the diagnoſis, and proceed to treat the caſe under an erroneous opinion of its nature. I have known different inſtances in which this miſtake has actually taken place. In ſome of the caſes, a preternatural accumulation in a burſa was miſtaken for the maturation of an abſceſs. In others, a collection of purulent matter for the ſwelling of a burſa. It is, therefore, a matter of importance to attend to every circumſtance of difference which can lead to an accurate diſtinction of the two caſes, in order to avoid the commiſſion of any error in practice. At the period of the caſes, from which the deſcription is taken, the two complaints bear a very impoſing reſemblance to each other; though, even at this point of time, we in general find the phlegmon more prominent at the center, and the apparent thinneſs of the ſkin more circumſcribed

ſcribed within the limits of a particular ſpot. The diſquamation of the cuticle is a more common occurrence at the ſurface; and the baſe is upon the whole more regular in its figure, firmer in its conſiſtence, and bears a larger proportion to the ſize of the ſoft part in the center.

In the caſe of a collection in the burſa too, the pain continues to ſubſide after this period, and in no inſtance does it ever become more ſevere. But the pain of a ſuppurating abſceſs often continues increaſing till the ſkin gives way and allows the matter to be diſcharged. Beſides this, the middle part gradually becomes more prominent, and the ſkin thinner. It is farther evident, that, if any fluid collection had been perceived at an early period of the caſe, this muſt have proceeded from an accumulation in the burſa, as purulent matter takes a longer time to form; yet, with the advantage of every collateral aſſiſtance, it is ſometimes difficult to adopt an opinion with confidence.

fidence. In all ſuch caſes therefore, where any doubt or uncertainty prevails, it is more prudent to wait till time diſcloſes the true nature of the complaint than to proceed with precipitation. For the delay of a day or two is productive of no bad conſequence, compared with the riſk of opening a burſa contrary to our intention. And by this cautious way of proceeding, we may hope to attain a ſatisfactory knowledge of the caſe, before we are obliged to determine the line of practice which we ought to purſue. I ſhall however poſtpone the conſideration of the proper method of treating affections of the burſa to a ſeparate article.

CHAP.

CHAP. III.

TUMOURS CONTAINING BLOOD.

THE next ſpecies of tumor which I ſhall conſider contains effuſed blood. The caſes which have come under my obſervation have been ſituated upon the anterior part of the knee, including in part the region of the patella, though upon the whole they were rather lower. The tumours were quite ſoft and colourleſs, as none of the effuſed blood had penetrated through the ſubſtance of the ſkin. They were very little painful to the touch, and the baſes were not circumſcribed by any ſwelling or induration of the cellular ſubſtance. There were

were no marks of inflammation, but as the perception of a fluid contained in them was perfectly diſtinct, they exhibited all the characters of encyſted tumours. It is not therefore ſurpriſing to find much difficulty in determining the true nature of the complaint, eſpecially when no aſſiſtance is derived from the previous hiſtory of the caſe. For although the rupture of blood veſſels is in general occaſioned by violence, yet in ſome inſtances it happens ſpontaneouſly, ſo that even in the origin of the ſwelling there is no circumſtance which leads to a knowledge of its contents. It ought farther to be obſerved, that on the anterior part of the knee, the blood-veſſels are of too ſmall a ſize to produce any pulſation in the tumour. When theſe tumours do not inflame and are not painful, they continue long unchanged. And as effuſions of blood are but rare occurrences, and lymphatic effuſions ariſing either in conſequence of violence, or ſpontaneouſly, much more common, ſuch tumours are frequently conſidered to be of the

the latter kind, and treated accordingly. If they ſhould diſcuſs by reſolution without previous diſcolouration, then the true nature of them is never accurately known; but, if they remain long unchanged, then the trouble which they occaſion often renders them the ſubject of very vexatious practice; for, after every attempt to cure them by diſcuſſion fails of ſucceſs, there is then no alternative left but to evacuate the contents by an opening. And it frequently happens that this is the firſt time the true nature of the tumour is accurately known. The diſcovery, however, does not afford much comfort to the patient, as tumours which contain fluid blood, and are of conſiderable duration, always heal ſlowly, and after an unkindly manner. In one caſe, the patient almoſt fainted upon opening the tumour, although it did not contain above a few ounces of blood. Another caſe was attended with an uncommon degree of pain. Indeed all the caſes I have ſeen have proven exceedingly tedious

and troubleſome. The internal ſurface of the cavity had loſt all diſpoſition to unite by adheſive inflammation long before the opening had been made; it would even ſeem to have acquired an unhealthy diſpoſition, which had made it unfit for ſuppuration, at leaſt the ſuppuration was long of forming, and the matter which was diſcharged was thin, bloody, and acrid. The texture of the ſubjacent ſkin likewiſe appeared to have undergone an unfavourable change. It did not, indeed, ſeparate in mortified ſloughs, but ſeemed, in ſome meaſure, to have loſt the regular organization of its texture, and to be converted into a ſoft pulpy moſs, in which the powers of life were greatly impaired, and the ſubſtance of the ſkin in part conſumed. In this ſtate, the cure went on ſlowly; and, from the tardineſs of its progreſs, the unhealthy appearance of the parts, and the pain which was occaſionally troubleſome, the final termination was for ſome time doubtful. At laſt, however, every caſe of the kind, which I had occaſion to ſee, got completely

pletely well. At particular periods of the cure indeed, there was conſiderable apprehenſion entertained for the ſafety of the knee joint, leſt, from the vicinity of the diſeaſed parts, the ligaments might have become morbidly affected. Fortunately, however, they eſcaped without injury, all the patients recovering the free uſe of the joint. There was nothing in the treatment different from what would have been employed in caſes of tumours formed from effuſed blood in any other part of the body, though, from the local ſituation of the attack, the event was more critical. The cure was completed chiefly by the uſe of emollient cataplaſms and ſimple dreſſings; the ſtate of the ſores, though they did not bear a promiſing aſpect, never requiring a more ſtimulating application. At the ſame time it was neceſſary to attend to the management of the conſtitution, to allow nouriſhing diet, to give Peruvian bark along with a moderate quantity of wine, in order to ſupport the patient's ſtrength during the cure.

CHAP.

CHAP. IV.

WHITE SWELLING.

BUT by far the moſt ſerious and important affection of the knee, and in this country, at leaſt, I am afraid the moſt frequent, is known by the name of a WHITE SWELLING OR INCOME.

The firſt name had been applied on account of the appearance of the complaint in its advanced ſtages, as the ſkin in general remains of its natural colour, however large the ſize may be which the ſwelling attains. The other name has been given in conſequence of the ſlow and inſidious approach of the

the attack, as the complaint often ariſes form inſenſible beginnings and without any known cauſe. Both names therefore have taken their origin from obvious and marked ſymptoms, though neither of them convey a full and adequate idea of the true nature of the diſeaſe. Any name, however, will ſerve the purpoſe of diſtinction, provided it be always employed to ſignify the ſame thing. And in a diſeaſe which appears under ſo great a variety of forms, no name with a ſignificant meaning will comprehend every caſe.

The ordinary mode of attack begins in the form of ſwelling on the anterior and lower part of the knee, occupying in general the two little hollows on the different ſides of the ligament which joins the patella to the tibia. At firſt they exhibit more the appearance of a general fullneſs in the parts than of particular and prominent ſwellings. For ſome time indeed the alteration of form attracts ſo little attention, that it is ſeldom noticed till the patient

patient ſuffers inconvenience, from the concomitant weakneſs and pain, but the acceſſion of theſe ſymptoms prompt him to examine the ſtate of the knee, when he obſerves the incipient ſwelling. The pain however is ſo inconſiderable, that it is regaded rather as uneaſineſs occaſioned by exerciſe, than by diſeaſe. Yet the whole combination of ſymptoms excite apprehenſion that the rudiments of a diſeaſe are already formed, which in time will become more ſevere. Though at this early period, the patient is in general free from uneaſineſs when he lies at reſt and has not lately taken exerciſe, at the ſame time the parts are in general of ſuch delicate ſenſibility, that any unfavourable change of weather is apt to affect them, and to revive the feeling of pain. But the inconvenience is eaſily born, and it is more the apprehenſion of future bad conſequences than the immediate diſtreſs of the ſufferer, which is the ſubject of anxiety and concern. For in all other

reſpects

reſpects the patient's health remains unaffected, his appetite good, and his ſtrength unimpaired. And by moderate attention, the inconvenience becomes ſo much diminiſhed, that he may entertain hopes of having entirely conquered it. Theſe hopes indeed are ſometimes realized, the patient afterwards continuing well; but it much more frequently happens that from ſome over fatigue or expoſure to cold and damp, or perhaps from ſome unknown cauſe, the ſymptoms appear again and become more ſevere than ever. The pain in particular is more violent, for the moſt part too it is confined to a circumſcribed ſpot, which feels painful to the touch, and is in general ſenſibly warmer than the ſurrounding ſkin. There is often indeed a general tenderneſs over the whole knee, though it does not amount to the ſeverity of pain. The progreſs of every ſymptom is ſlow, though ſenſibly upon the increaſe; ſo that the ſwelling gradually extends itſelf over the whole of the knee, which now ſuffers an evident

enlargement,

enlargement. The pain becomes more conſtant, more general, and more ſevere. Upon the whole, the patient now feels greater and more uninterrupted uneaſineſs, and in conſequence of the increaſing ſeverity of the ſymptoms, and the conſtancy of the irritation, he ſuffers from attacks of fever.

Theſe feveriſh attacks begin at firſt in the evening, and for ſome time are only of a few hours duration, but afterwards the pulſe continues more uniformly accelerated, and the fever aſſumes more accurately the form of a regular hectic.

A ſwelling of the inguinal glands is likewiſe a frequent conſequence of the affection of the knee, and commonly makes its appearance about this period. It is not however a conſtant ſymptom, at leaſt, it is not always of ſuch importance as to attract particular notice either from the ſize of the ſwelling or the uneaſineſs which it excites.

I never knew a ſingle inſtance in which this ſecondary affection of the inguinal glands formed a permanent complaint, or continued troubleſome after the original diſeaſe in the knee was removed.

Patients, under an incipient attack of white ſwelling in the knee, firſt experience inconvenience in walking from the weakneſs of the joint; a ſymptom which is more eſpecially troubleſome after exerciſe. But as ſoon as the pain becomes conſtant, the patient is no longer able to reſt the weight of his body upon the affected limb, without a great increaſe of uneaſineſs; on this account, he is willing to ſave the limb as much as poſſible, therefore he touches the ground merely with his toes, truſting the ſupport of his body chiefly to the other limb. In walking after this way, the knee neceſſarily becomes bent, and what is begun occaſionally from this cauſe, becomes permanent from other cauſes. So that, after a certain

period, the joint continues permanently in a ſtate of flexion.

The diſtention which the ſkin ſuffers, from the increaſe of the ſwelling, gives to the whole ſurface a ſmooth and ſhining appearance; the ſwelling likewiſe acquires more of a ſpherical ſhape, loſing, by degrees, that variety of form which is natural to the knee joint in a healthy ſtate. In ſome caſes, it attains a very great ſize, and becomes nearly round; in this ſtate, too, it poſſeſſes a certain degree of ſoftneſs, ſo that it appears to conſiſt of a fluid collection. The appearance of fluctuation, however, is rarely produced by the actual preſence of a fluid; but rather ariſes from the general ſoftneſs of the whole maſs, which communicates ſomewhat of a ſimilar ſenſation to the touch. The exiſtence of a fluid, however, is a point which it is of much conſequence to aſcertain with accuracy, as the opinion which we entertain reſpecting it muſt ofter regulate our conduct in certain delicate points

of

of practice. In ſome mixed and difficult caſes, indeed, we may feel ourſelves unable to pronounce a deciſive opinion upon the ſubject. But, in the determination of the eſſential practical queſtion, whether the ſenſation proceeds ſolely from the fluctuation of a fluid contained within the capſular ligament, or ſolely from the undulation of a ſoft maſs ſituated wholly exterior to it, we can often form a confident judgment. When a fluid lies within the capſular ligament, it may be made to undulate diſtinctly from one ſide of the knee to the other, paſſing under the patella. The patella neceſſarily riſes during the paſſage of the fluid, eſpecially if the leg be extended; hence the motion of the fluid, along with the elevation of the patella, mark the place and nature of the complaint diſtinctly; for, when the appearances are occaſioned by a ſoft external ſwelling, there is no ſuch motion communicated from one ſide of the knee to the other; no elevation of the patella; on the contrary, the patella, ſo far from being elevated, is rather depreſſed,

ſomewhat

ſomewhat below the level of the ſurrounding parts, ſo that there is hollowneſs, or at leaſt a flatneſs, at the place where it ought to be prominent. By attending to thoſe circumſtances, a ſenſation which might ſeem to proceed from a fluid collection, will be known to ariſe from the undulation of an uniform maſs of ſoft matter.

The accumulation of this ſoft matter is likewiſe the cauſe of another difficulty, by giving the appearance of an enlargement of the bone, although no ſuch enlargement actually exiſts; for, as preſſure makes this ſoft maſs of matter mould itſelf upon the ſubjacent parts, it aſſumes the form of the bone beneath, and, by the additional thickneſs which it every where communicates, conveys the idea of an actual enlargement. The ſenſation, however, is, in moſt caſes, entirely fallacious, and proceeds ſolely from the cauſe of deception which I have endeavoured to explain. In all ſuch caſes, therefore, we ſhould not be precipitate and confident

confident in pronouncing the bones of the knee to be preternaturally enlarged from diſeaſe.

There is one ſymptom of a very ſingular nature, which frequently occurs at an early period of the attack. The ſmall intumeſcence at the top of the tibia, when examined by the touch, communicates a ſenſation as if it contained air. This feeling of crepitation is very much circumſcribed in its extent, being in general confined to the little maſſes of cellular membranes, ſituated below the patella. Sometimes indeed, though I confeſs rarely, I have perceived a ſimilar ſymptom above the patella. As this ſingular ſymptom is circumſcribed in its extent, ſo likewiſe it is limited in its duration, ſince it only continues perceptible for a ſhort time during the early ſtage of the attack. It is not a conſtant ſymptom, and whenever it appears it indicates nothing particular.

After

After the knee joint has continued for ſome time in a diſeaſed ſtate, the diſeaſed action gradually extends its influence over the neighbouring parts. The leg and thigh waſte and become emaciated, and the whole ſyſtem is brought into conſent, ſo that the patients health and ſtrength are gradually undermined, till at laſt he dies exhauſted from the continuance and aggravation of his ſufferings.

As a caſe of white ſwelling is attended with no conſpicuous ſymptom excepting that of enlargement, the true nature of the diſeaſe cannot be diſcovered till the morbid parts are expoſed to view by diſſection. The appearances which then preſent themſelves are in general ſufficiently characteriſtic of the complaint. The great maſs of the ſwelling appears to ariſe from an affection of the parts exterior to the cavity of the joint, and which, beſides an enlargement of ſize, ſeem alſo to have undergone a material change of ſtructure. There is a larger than natural proportion of a viſcid fluid

fluid intermixed with the cellular ſubſtance. And the cellular ſubſtance itſelf has become thicker, ſofter, and of a leſs firm conſiſtence than in a ſtate of health. Thus it approaches ſomewhat to the nature of an uniform pulpy maſs, and by this means undulates when ſtruck ſo as to reſemble the obſcure fluctuation of a fluid, and when gently and regularly preſſed applies accurately to all the little inequalities of the bone, preſenting the appearance of a ſolid permanent enlargement.

The conſiſtence of the ſwelling indeed varies conſiderably, according to the duration of the complaint. When the ſwelling is recent and has increaſed rapidly, the glutinous fluid is more liquid, and the cells which contain it more diſtinctly ſeparated, ſo that the diſtinction between the fluid and ſolid parts is quite evident. But when the ſwelling is of an old date, and has grown by ſlow degrees, the whole of its ſubſtance becomes of a more homogeneous conſiſtence, very

very much reſembling a maſs of ſoft cartilage, in which no diverſity of parts is eaſily diſcernible. In this ſtate, the ſubſtance is too ſolid to communicate to the touch any ſenſation ſimilar to the fluctuation of a fluid. Another circumſtance which prevents the perception of any ſuch ſymptom in thoſe old caſes, is the change which the ſkin undergoes, as it becomes thicker, firmer, and more inſenſible, approaching ſomewhat to the appearance which the ſkin aſſumes in caſes of elephantiaſis.

With reſpect to the ſtate of the capſular ligament, it would appear to undergo a material alteration in its ſtructure, very ſoon after the commencement of the attack. It loſes the firmneſs of its texture, and as the texture becomes looſer, the thickneſs of ſubſtance increaſes. The external ſurface too, in place of preſenting a bluiſh colour, with ſomewhat of a ſhining luſtre, is more of a dead opake white. But in general, the moſt eſſential change is to be obſerved upon

on the inſide of the ligament, which becomes covered with a layer of a ſoft ſubſtance of a pale yellowiſh colour, and ſemi-tranſparent. This ſubſtance is often nearly one eight of an inch in thickneſs; it is commonly very ſoft on the inner concave ſurface, and firmer on the outer convex part, where it adheres to the inſide of the capſular ligament with a conſiderable degree of firmneſs. In many places there is a very beautiful plexus of veſſels, and, at the interſtice between the ſurfaces of the femur and tibia, an appendage full of blood veſſels, particularly at its edges, frequently inſinuates itſelf to the diſtance of nearly half an inch. This layer of adventitious matter ſeems to be compoſed of a lymphatic exudation, and, in this reſpect, may not ſo far differ from the nature of the effuſion which forms the external ſwelling. The great number of veſſels proves the exiſtence of a certain ſtate of inflammation.

When the burſal ligament is cut through,

and the cavity of the joint laid open, we ſeldom diſcover any conſiderable quantity of fluid collected within it, and what is found there has ſtill more ſeldom the appearance of genuine purulent matter. It in general conſiſts of a whey-coloured fluid, interpoſed with a ſmall proportion of matter, and of ſome of the ſolid parts of the joint in a ſtate of decay.

The appearance of this latter ſubſtance leads us next to conſider the ſtate of the bones and cartilages. In the advanced ſtate of the diſorder, it is uſual to find great ravages committed on the articulating ſurfaces of the joint. The cartilages of the tibia, in particular, are almoſt completely conſumed, and the cartilages of the condyles of the femur are at leaſt deſtroyed in part. The conſumption of the cartilages begins at the edges, where they firſt become ſoft, and waſte away; and this ſpecies of decay gradually approaches towards the center, till nothing remains but a ſcale not broader

broader nor thicker than a wafer. While the circumference is decaying, a ſeparation is likewiſe taking place between the ſurfaces of the bone and cartilage, ſo that all connection between them is loſt before the whole ſubſtance of the cartilage is conſumed. It is likewiſe uſual to find a ſmall quantity of matter occupying the intervening ſpace. In ſome caſes, I have ſeen the decay of the cartilages begin with an appearance of thinneſs at the edges, without much difference in point of conſiſtence, attended, at the ſame time, with a diminution in the firmneſs of the attachment. I have likewiſe obſerved, that the decay of the cartilage is always much farther advanced upon the tibia than upon the femur. This decay of the cartilages, however, does not appear ſo early as the affection of the external ſoft parts; it will even happen, that the affection of the ſoft parts has made ſo much progreſs as to render amputation neceſſary before the cartilages are materially affected.

If the cartilages are late of being affected, the bones are ſtill later, the firſt ſymptom of affection of the bones being the detachment of the cartilage, and its incipient decay. In this reſpect, too, the femur is later than the tibia. Indeed, in many caſes which have required amputation, there is no mark of eroſion to be obſerved on the ſurface of the femur, while, at the ſame period of the attack, the top of the tibia has ſuffered from deep excavations on many parts of its ſurface. The impreſſion firſt begins to be made at the anterior edge of the flat ſurface on the head of the bone, and from this point of commencement, it travels gradually round to the poſterior part, keeping all the while near to the edge of the bone. Theſe eroſions are often nearly half an inch in diameter, and about equally deep. Their number is various, but frequently ſufficient to ſurround the whole bone, while the middle part continues as ſmooth and poliſhed as in the moſt healthy ſtate. It is likewiſe not unuſual

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to find eroſions beginning between the apophyſis and body of the bone. I never indeed have ſeen them ſo deep as to produce a complete ſeparation. It may here be remarked, that, in the original formation of the tibia, theſe two parts, the apophyſis and diaphyſis, are ſeparately formed, and each provided with a diſtinct perioſteum; and although, upon their coaleſcence, the intervening perioſteum becomes obliterated, yet, at the place of their junction, the perioſteum adheres more firmly and ſinks deeper than any where elſe. Upon this account it ſhould ſeem, that this part is attacked in preference to others, and affords a proof that the diſeaſe originally begins in the ligaments and membraneous ſubſtances, and travels along them to their inſertion. Such in general is the appearance which the head of the tibia preſents. I have never known or heard of an inſtance in which the tibia was enlarged from an attack of white ſwelling.

The

The effects produced on the condyles of the femur are very different. For although they make part of the ſame joint, yet it frequently happens that they exhibit but little of a morbid appearance. Some authors indeed have aſſerted, that the condyles of the femur almoſt conſtantly become enlarged. An aſſertion which is undoubtedly true, provided it be limited to a ſmall number of caſes. But if it be ſtated as a general poſition it certainly is not founded in fact. For although I have attended very much to this circumſtance in the diſſection of a great number of caſes of white ſwelling, I have rarely been able to diſcover the ſmalleſt enlargement in the condyles of the femur. I likewiſe find the accuracy of this obſervation confirmed by the report of other ſurgeons in extenſive practice, who have enjoyed excellent opportunities to examine the truth of the fact. So that I am inclined to regard this enlargement of the condyles of the femur, to be an accidental effect, rather than a neceſſary conſequence of the diſeaſe.

eaſe. It certainly is not the ordinary cauſe of the ſwelling of the joint at the commencement of the complaint. Indeed, from the whole hiſtory of the diſeaſe, it is apparent that the attack does not begin firſt in the bones.

In thoſe caſes in which the condyles of the femur are enlarged, the enlargement is irregular, ſo that the bone becomes diſtorted from the irregularity of its growth. It is however ſo very rare an occurrence, that notwithſtanding I have had extenſive experience in the diſeaſe, and have attended particularly to this circumſtance, I have met with very few inſtances in which this enlargement was evident.

The moſt ordinary external marks of diſeaſe on the condyles of the femur, are ſuperficial eroſions near the margin of the cartilages, but theſe are ſeldom either numerous or deep, and their exiſtence is by no means conſtant. The edges of the cartilages are often

often worn thin, and in a ſtate of incipient diſſolution and ſeparation. Though I never found any of theſe proceſſes far advanced at the time the inſpection was made; yet notwithſtanding the abſence of ſevere ſymptoms, the femur is by no means in a ſound ſtate; it is invariably of a ſofter conſiſtence than natural, ſo that it is readily pierced with any ſharp inſtrument. Along with this preternatural ſoftneſs of the condyles, the ſolid ſhell of the cylindrical portion of the bone is in general unuſually thin, from which changes it appears that the diſeaſe produces a waſte in the ſubſtance of the femur.

The ſtate of the patella in general attracts leſs notice than the ſtates of the two other bones. Though, when examined with care, the cartilage is commonly found beginning to diſſolve and ſeparate, though the ſubſtance of the bone is rarely much affected.

It

It is likewiſe uſual to find the exudation on the ſurface of the capſular ligament, which ſurrounds the margin of the patella, incroaching on its ſurface, ſo that being by this means partly buried and concealed, it appears at firſt ſight to be diminiſhed in ſize.

Such upon the whole is the ordinary hiſtory of the commencement, progreſs, and appearance of a caſe of white ſwelling. It is a complaint however which is ſubject to many varieties, both as to the place and manner of its origin, and as to the ſymptoms which it exhibits. For although the ſwelling in general begins at the upper part of the tibia, there are ſome caſes in which it firſt appears about the under part of the thigh, nearly occupying the region of the two vaſti muſcles. From thence the ſwelling gradually travels downwards, till at laſt it ſettles upon the joint. The ſwelling at firſt has no determinate ſhape, being rather a general fullneſs than any thing like a regular tumour, and at the ſame time without pain. In this

ſtate it ſhews no particular character. There is no ſenſe of fluctuation, and it rather attracts notice as a ſubject of alarm, from its vicinity to ſo important a joint, than as the cauſe of immediate diſtreſs. It is however uſual to perceive a certain degree of weakneſs in the joint, about the time this ſwelling firſt appears.

There is another ſpecies of ſwelling which occupies the ſame part of the thigh, but ariſes from the effuſion of a fluid. The ſwelling is in general more diffuſed and deſcends lower down upon the knee. It begins without any known cauſe, and is not accompanied with pain. Both from its ſituation and from the nature of the fluctuation, it appears evidently to be ſuperficial, and wholly unconnected with the joint. But as it in general continues to increaſe gradually, without any tendency to diminiſh or diſcuſs, it is apt at laſt to include the joint within the ſphere of the morbid action, and the diſeaſe which then forms is in all its eſſen-

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tial particulars ſimilar to thoſe attacks which have a very different mode of commencement. Yet while its ultimate ſtate bears an accurate reſemblance to another form of attack, the prognoſis and treatment, eſpecially in the incipient ſtages, are conſiderably different.

The fluid collection which I have now deſcribed lies immediately under the ſkin, and has no determinate ſhape or limitation. But there is another variety which, though likewiſe exterior to the joint, has a deeper ſeat and more determinate form. It is ſituated upon the burſae mucoſae which lie near to the joint. The ſwelling, while it evidently contains a fluid, is often tenſe, prominent, and painful. In this ſtate it plainly is connected with a certain degree of inflammation. And if this inflammation be of an unlucky kind, which often is the caſe, the whole of the knee becomes affected and degenerates into ſymptoms ſimilar to thoſe which a genuine white ſwelling produces. Properly, however, this form of attack is a mo-

modification of another ſpecies of complaint, which will require ſeparate and more particular diſcuſſion in another place. For a like reaſon alſo, I intentionally delay the conſideration of that variety of white ſwelling, which firſt ſhows itſelf under the form of a lymphatic effuſion, into the cavity of the joint ; becauſe, although ſuch effuſions ſometimes terminate in an attack of white ſwelling, they often have a more favourable and very different termination. And upon that account conſtitute a ſeparate claſs of affections.

But there is a mode of attack which, though at bottom it ſeems to originate from the ſame cauſe, yet exhibits ſymptoms ſo totally different at the commencement, that it is difficult to recognize the identity of the diſeaſes. In this variety there is no external ſwelling, nor any other ſymptom of diſeaſe, but the patient is ſuddenly ſeized with a deep ſeated moſt excruciating pain, attended with extreme weakneſs.

weakneſs. The pain ſeems confined to a very limited ſpot, and is ſeldom exaſperated upon preſſure, nor is there any marks of external inflammation. It differs from attacks of gout and rheumatiſm in the fixity, ſeverity, and circumſcription of the pain, and in the abſence of external ſwelling, inflammation, and tenderneſs. There is no complaint more obſtinate and intractable; ſo that, from the unceaſing conſtancy of the diſtreſs, it ſometimes becomes neceſſary to remove the limb by amputation. Mr Cheſelden is the firſt author who gives a diſtinct and pointed account of this variety of the attack; and adds, that, upon diſſecting the knee joint, no mark of diſeaſe is to be perceived, excepting that the bones are ſofter than natural. In this reſpect, the caſe is ſimilar to ordinary caſes of white ſwelling, and it is one of the leading circumſtances from which their identity is inferred. It never has occurred to me to witneſs a caſe of this kind ſo urgent as to require amputation, though I have met with

with different inſtances in which this character was predominant, and which left no doubt on my mind with regard to the nature of the attack.

There is yet another variety of ſufficient importance to merit particular notice. In this variety the motion of the joint, inſtead of being limited from rigidity, becomes more free from relaxation, ſo that it not only admits of complete extenſion, but even allows the leg to be bent ſomewhat forward. This extraordinary degree of mobility is a very curious circumſtance, though, in reality, it is not ſo totally incompatible with the true nature of the diſeaſe as the diverſity of appearances might at firſt ſight ſuggeſt; for the marked tendency of white ſwelling is to produce ſoftneſs and relaxation in every part which it attacks, ſo that the preternatural ſtiffneſs, which occurs in particular ſtages of the diſeaſe, ſeems to ariſe from an accumulation of adventitious matter on the external parts, rather than from

from any increaſed rigidity in the texture of the membranes, or in the moving powers of the joint. Accordingly, in theſe caſes which admit of flexion, forward beyond the ſtraight line, there is little perceptible ſwelling. But whenever there is a permanent ſtate of flexion, there is always a conſiderable enlargement of the anterior part of the knee; and in proof of this explanation, we find, that, upon the removal of this adventitious accumulation of matter, the joint regains its natural power of motion, as the ligaments which ſurround it are nowhere contracted or rigid. Even the ſuppoſed idiophatic rigidity of the flexor tendons is a point by no means inconteſtably aſcertained; for, after amputation in ſuch caſes, the motion ſtill continues equally confined; a circumſtance which demonſtrates that the immobility depends upon the morbid compoſition which ſurrounds the parts, and not upon the ſtate of the muſcles or tendons of the knee joint. It is true, that ſo long as the knee

knee remains inflexible, the muſcles muſt appear incapable of extenſion. But, as in all caſes of white ſwelling which have laſted for a conſiderable time, the muſcles become pale and of a watery conſiſtence, and are little capable of producing permanent contraction; ſo that the apparent rigidity of the flexor tendons ſeems to be the conſequence of their long continuance in one poſture, and they probably would ſoon recover their natural functions, provided the bones and ligaments were again reſtored to the uſual freedom of motion.

The variation in the rate of progreſs in caſes of white ſwelling, is ſingularly remarkable. In thoſe caſes which proceed the moſt rapidly, the diſeaſe will reach its acme in the courſe of a few weeks. The ſwelling by this time attains a large ſize; the whole ſyſtem is brought into conſent, and the patient is in danger of falling a ſacrifice to the ſeverity of the attack. Thoſe caſes, on the contrary, which are diſtinguiſhed

guiſhed by the ſlowneſs of their progreſs, will endure for thirteen or fourteen years, without reducing the patient to the neceſſity of parting with the limb. In caſes of ſo long ſtanding, it will naturally be expected, that the pain is not intolerable, and that the patient ſuffers no general ſymptom of diſtreſs, otherwiſe he could not poſſibly hold out for ſo great a length of time. Even at laſt there is neither ſo great a degree of pain, nor ſo great a degree of fever as in the former claſs of caſes. It is their conſtancy and continuance which renders the patient's ſituation intolerable. There is no known peculiarity of conſtitution or train of circumſtances which prediſpoſes to this chronic attack of white ſwelling. But the very rapid and acute caſes ſeem to be connected with ſome occaſional ſtate of great relaxation and weakneſs.

Accordingly, the moſt remarkable inſtances of this variety, which have fallen under my obſervation, have occurred in the

perſons of women in child-bed. In ſuch caſes, as the diſeaſe has laſted only a few weeks, it ſeems leſs remarkable that the bones ſhould be little affected. But, after a duration of twelve or fourteen years, the bones might then have been expected to have ſuffered conſiderably. This, however, is not the fact; as the eroſion, in ſome caſes of this latter deſcription, appears to have made inconſiderable progreſs; a circumſtance which of itſelf affords ſatisfactory proof, that an attack of white ſwelling does not neceſſarily and originally begin in the bones, as we here perceive, that, in the extreme caſes for rapidity and tardineſs, the bones are very little affected.

When thoſe rapid and recent caſes are cut into, the change, from the natural appearance, excepting what proceeds from the effuſion of a lymphatic fluid, is not very remarkable. And this effuſed fluid is ſo copious in quantity, and ſo little changed in quality, that it will run out at the inciſions

inciſions in a liquid ſtate, without having aſſumed any thing like the appearance of purulent matter. In the tedious and chronic caſes, there is time to produce very marked and important changes in various reſpects. Accordingly, little veſtige remains of the natural appearance of the ſoft parts. If originally there had been a fluid effuſion, it has by time either been abſorbed, or has undergone a change of conſiſtence, and acquired the firmneſs of a gelatinous or cartilaginous maſs. There are no remains of the diſtinct reticulated texture of the cellular membrane accompanied with its natural laxity and mobility. The regularity of its fabric is deſtroyed, and the firmneſs of its ſubſtance diſſolved, ſo that no diſtinction is any longer viſible between the different parts which compoſe the knee, but the whole preſents a homogeneous uniform ſtructure, the effect of a ſlow and gradual change. It does not ſeem to poſſeſs that morbid degree of irritability ſo common to parts under a ſtate of diſeaſe, excepting

excepting in particular places which have been affected by a ſpecies of inflammation, and contain matter in a more fluid ſtate. Theſe places feel ſoft to the touch, and are interſperſed through different parts of the general maſs. Their contents are not of a homogeneous nature, but conſiſt partly of ill concocted purulent matter, partly of a large portion of very ſoft gelatinous matter, and of a portion of thin dark coloured fluid. When theſe little cavities are opened, they emit a moſt offenſive ſmell. The ſkin, which is not properly the ſeat of the diſeaſe, undergoes no other change in thoſe chronic caſes, excepting that of acquiring a preternatural thickneſs of ſubſtance and firmneſs of texture. I have been more particular in deſcribing the appearance of theſe partial and morbid ſuppurations, becauſe in the caſes of young children they appear under a different form. With them, the ſuppurations are quite ſuperficial, and attended with all the ſymptoms of more acute inflammation. They commonly attain the

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ſize of a horſe bean before they burſt, and then they diſcharge purulent matter of a tolerable healthy appearance. After this, they in general heal without particular difficulty; while others ariſe in the immediate neighbourhood, reſembling the former in all reſpects, and running a ſimilar courſe. Upon the whole, the occurrence of theſe partial ſuppurations ſeem neither to accelerate nor to retard, nor in any other way to affect the progreſs of the complaint.

It is in thoſe caſes of infants likewiſe, that the formation of anchyloſis ever occurs, as the termination of a caſe of white ſwelling. Though even with them anchyloſis is ſo rare an occurrence, that I never enjoyed an opportunity to examine a caſe of it till many years after the anchyloſis had been completed.

Beſides the appearances which occur in the different diſtinct varieties of white ſwelling, which I have endeavoured to deſcribe, individual

dividual caſes are frequently accompanied with large partial ſuppurations, and with other anamolous ſymptoms which could not be included in a general account of the diſeaſe, though the occurrence of theſe ſymptoms renders the particular caſe in which they appear more complicated and more difficult to manage.

It now only remains to ſpeak of the nature of white ſwelling of the knee joint. And in this view, I have no heſitation to claſs it among ſcrofulous affections. For not only the leading ſymptoms reſemble thoſe of ſcrofula, but white ſwelling often occurs in the perſons of patients whoſe conſtitutions are manifeſtly ſcrofulous. The diſeaſe therefore would ſeem to be a modification of ſcrofula attacking the knee joint. The ſoftneſs and ſuperficial eroſion of the bones, the ſeparation and diſſolution of the cartilages are all characteriſtic ſymptoms of ſcrofula. To the ſame character belongs the colourleſs ſwelling occaſioned by a lymphatic effuſion, ariſing without any known cauſe, and unaccompanied

companied with external inflammation, and alſo the nature and appearances of the exudation, which lines the inſide of the capſular ligament. It may farther be remarked, that in thoſe countries where ſcrofula rarely occurs, white ſwelling is a diſeaſe almoſt entirely unknown to practitioners. Accordingly Morgagni mentions the unfrequency of the diſeaſe in Italy. It would likewiſe appear to occur but ſeldom at Vienna, and in many other parts of Germany. In thoſe countries, eſpecially in the fine climate of Italy, ſcrofula is much leſs prevalent than in the colder and moiſter climates of the north. There is indeed no country in which white ſwelling more frequently occurs than in the iſland of Great Britain, in which ſcrofula is known to be ſo prevalent. Beſides thoſe general conſiderations, if we attend to particular ſymptoms, we ſhall find them exactly ſuch as we might expect an attack of ſcrofula to produce.

This

This view of the ſubject leaves little doubt reſpecting the true nature of the affection. And once we admit ſcrofula to have a ſhare in producing every attack of genuine white ſwelling, it is not ſurpriſing to find the ſymptoms modified with a conſiderable variety of appearances.

CHAP.

CHAP. V.

SIMPLE INFLAMMATORY ATTACK.

AN attack of ſimple inflammation produces a tenſe painful ſwelling of the knee, accompanied with a local increaſe of heat, and the patient is at the ſame time diſtreſſed with the common ſymptoms of inflammatory fever. The attack varies in its degree of violence, from one which is ſlight and tranſient, to one which terminates in ſuppuration or death. Genuine idiopathic inflammation of the knee joint,

however, is but a rare occurrence, though when it does occur, it preſents an intereſting object of attention on account of the ſize and ſtructure of the parts which are the ſubject of attack. For the knee is compoſed of a large articulating ſurface of bones, which are connected together by a numerous and extenſive ſet of ligaments; it is of a complicated ſtructure, and is protected by a thin covering of ſoft parts. Theſe circumſtances in its conſtruction render a ſevere attack of inflammation peculiarly diſtreſſing. For, in the early ſtage of the attack, the tenſion of the ligaments, when they are in an inflamed and irritable ſtate, excite the moſt excruciating pain. And, in the latter ſtages, ſuppoſing the caſe ſhould terminate by ſuppuration, the diſeaſed ſtate of the ligaments, which are long of regaining the ſoundneſs of health, proves a conſtant ſource of irritation, and gives the ſymptomatic fevers a tendency to aſſume a hectic type. For whenever a collection of purulent matter forms within the

cavity

cavity of the knee joint, the ligaments are expoſed to the action of diſeaſe, for a great length of time, on account of the ſtrength of the ſurrounding parts, which keeps the matter long confined before an external opening is formed to permit its evacuation.

The ſtate of the bones likewiſe comes in for a ſhare of the miſchief, for bones are in general ſlow in all their morbid actions, ſo that once they have been affected with diſeaſe, they do not recover ſpeedily, and thereby exaſperate the irritation which the morbid ſtate of the ligaments had contributed to induce. Inflammation of the bones, too, produces irregular growth, enlargement and adheſions which form anchyloſis. So that the joint continues afterwards to be permanently rigid, enlarged, and diſtorted. But as the ſubject of anchyloſis will be more fully conſidered in another place, I forbear ſaying more about it at preſent.

When

When the ſeat of the inflammation is exterior to the cavity of the joint, the ſymptoms never become ſo ſevere, nor when the caſe terminates in ſuppuration does the attack continue ſo long. For the matter then more readily opens a paſſage for itſelf externally, and by its evacuation produces great and ſpeedy relief.

In theſe caſes, however, we muſt not confine our attention ſolely to the degree of violence of the attack, without regard to other circumſtances, as it is a well known fact, that an inflammation, which was originally ſimple and unmixed, will, by a gradual and imperceptible change, be converted into one of a ſpecific nature, whenever the conſtitution of the patient is tainted by any particular diſeaſe. This acceſſion of a new and additional mode of morbid action, is eminently remarkable in the perſons of thoſe unfortunate people who are afflicted with a ſcrofulous taint. For it is the nature of ſcrofula to ſeize upon thoſe

thoſe parts of the body which have been weakened by an injury, or by the previous attack of any other diſeaſe. Upon this principle, an affection of the knee, which originally was not contaminated by any kind of malignity, is, from the unſound conſtitution of the patient, converted into a caſe of white ſwelling of a very bad nature. Under this form of attack, a caſe of white ſwelling may be conſidered as a caſe of ſimple inflammation modified by the ſupervention of ſcrofula. Other caſes likewiſe preſent an attack of inflammation as modified by the acceſſion of other diſeaſes. Thus, in patients of a gouty or rheumatic conſtitution, any injury which produces inflammation upon the knee is apt to invite an attack of gout or of rheumatiſm. The violence of the inflammation will vary according to the circumſtances of the attack; though, in whatever degree it exiſts, caſes either of gout or of rheumatiſm never terminate in ſuppuration. Attacks of rheumatiſm, when ſevere and frequently repeated,

peated, are apt to occaſion chronic rigidity about the joint, without leaving any conſiderable degree of ſwelling or pain. The joint being reduced permanently to a ſtate of flection from a contraction of the flexor tendons. In the early ſtages of the attack, too, there would alſo appear to be an effuſion into the cavity of the joint, as a ſenſe of fluctuation may be diſtinctly perceived by accurate examination with the finger. But this effuſion takes place too ſoon to be miſtaken for a collection of purulent matter formed in conſequence of ſuppuration; and, however great the effuſion may be, it is at laſt entirely removed in the progreſs of the cure, ſo that not a veſtige of it remains after the patient has recovered from the attack. I have known certain claſſes of accidents, ſuch as wounds penetrating the cavity of the knee joint, followed by effuſions of a ſimilar kind, though, in general, the concomitant ſymptoms of tenſion, inflammation, and pain, were conſiderably more violent.

As

As any of thoſe ſpecies of peculiarities may gradually ſupervene upon an attack of ſimple inflammation, and may taint it more or leſs with a ſpecific morbid action, it often becomes difficult to detect the true nature of the complaint, eſpecially at the time when the converſion is taking place. There is always, however, reaſon to ſuſpect, that ſomewhat more than ſimple inflammation will be the conſequence of the attack, if we be certain that the patient's conſtitution is ſuch as ſubjects him to attacks of ſcrofula, rheumatiſm, or gout.

CHAP.

CHAP. VI.

DROPSICAL SWELLINGS.

INFLAMMATORY attacks arising from various causes, and modified in some form or other, are by far the most frequent and severe, and, consequently, the most important affections of the knee joint. But there is another class of complaints, which, though unaccompanied with fever and pain, and of less frequent occurrence, is yet often attended with very serious consequences,

quences, and always exceedingly difficult to manage. This claſs of caſes conſiſts of effuſion into the cavity of the joint, and the caſes are conſidered as inſtances of Dropſy of the knee. They begin ſpontaneouſly without any known cauſe, and, in the courſe of a few days, increaſe to a large ſize. The diſtenſion which the ſwelling occaſions diminiſhes the mobility of the joint, ſo that it can neither be brought into a ſtate of complete flexion nor of complete extenſion. There is, however, no preternatural thickneſs in the parts which cover the joint, ſo that, in general, it is eaſy to aſcertain the nature of the ſwelling; and, when it is examined with care, the contained fluid may, at all times, be diſtinctly felt; for, by ſtriking upon one ſide of the knee, the fluid eaſily paſſes over to the other ſide, and communicates a ſlight impulſe by its motion. Or continued preſſure upon one ſide depreſſes that ſide, and elevates the other; and, while the fluid is moving from one ſide to the other under the patella, the patella is

made to riſe above its ordinary level; ſo that, by attending to theſe circumſtances, it is in general eaſy to diſtinguiſh the exiſtence of the fluid collection. But, though we may be fully ſatisfied with regard to the preſence of a fluid, it may not be ſo eaſy to determine the nature of the fluid, or the cauſe of its effuſion; as it may proceed either from mere weakneſs, or from weakneſs induced by ſome ſpecific diſeaſe.

Accordingly, I have known a dropſical ſwelling of the knee follow a caſe of low fever. There was no ſuſpicion of any other affection; no pain, and the ſize of the ſwelling was variable. In this inſtance, it ſeems to have been the conſequence of mere weakneſs; but, in other caſes, the effuſion was evidently connected with ſome general diſeaſe of the ſyſtem. The local appearance of the parts, indeed, betrayed nothing particular, as it was collateral ſymptoms which ſuggeſted grounds of inquiry. The preſence of ſyphilitic ſymptoms, as the contamination

contamination has been long preſent in the body, led to a ſuſpicion that the ſwelling in the knee was of a venereal nature. I have known different inſtances of this where the diſcovery was made by the detection of venereal ſymptoms in other parts of the body; ſo that, whenever ſuch an affection of the knee is preſent, along with venereal ſymptoms of long ſtanding, we have reaſon to conclude, that the ſwelling is the offspring of the ſame cauſe. As far as I have obſerved, venereal dropſies of the knee are not ſo indolent as thoſe which proceed from mere weakneſs; they have more tenderneſs, and are even painful upon being touched.

The other great cauſe of dropſical ſwellings in the knee is, the prevalence of ſcrofula in the conſtitution. The dropſy ſometimes ariſes in conſequence of violence, but it more frequently comes on gradually without any known cauſe. In this caſe, the approach of the ſwelling is more ſlow,

ſo

ſo that its beginning is imperceptible, and the time longer before it attains a conſiderable ſize. A ſcrofulous dropſy of the knee never becomes ſo tenſe as thoſe which proceed from a venereal taint; the ſkin, therefore, retains its natural ſoftneſs, and would, in ſome caſes, even ſeem ſofter and thicker than in a ſtate of health. The difference, however, which ſcrofula occaſions, is ſo ſmall, that its exiſtence is rather to be inferred from collateral circumſtances than to be diſcovered from any local ſymptom. There is no other cauſe of dropſy in the knee known as a diſtinct diſeaſe. All attacks of this kind are exceedingly diſtreſſing, tedious, and troubleſome; but that which proceeds from a ſcrofulous taint is by far the worſt, and moſt frequently terminates unfavourably.

Thoſe which depend upon a venereal contamination, ſeem to admit of a cure, and to be leſs liable to return; for, in the other varieties, a relapſe is not ſo uncommon an occurrence.

occurrence. In thoſe dropſies which proceed from mere weakneſs, the ſwelling ſometimes diſappears ſpontaneouſly as the patient gains ſtrength. But, in the other two ſpecies, a cure never takes place but by the interpoſition of art.

CHAP.

CHAP. VII.

*UNCOMMON DISEASE.**

THERE ſtill remains to be noticed another affection of the knee joint, moſt ſingular in its appearances and moſt dangerous in its conſequences.

It is anomalous and undeſcribed. I have only met with four or five caſes of it among the great number of patients I have had occaſion to ſee, with various affections of the knee. All thoſe caſes were far advanced

* See plate firſt.

vanced in their progreſs, before they came under my obſervation, and the incipient ſtages of the diſeaſe were not diſtinctly deſcribed by the patients. At the time of examination, the ſwelling was of a very large ſize, an irregular ſhape and firm conſiſtence. There was no diſtinct ſenſe of fluctuation communicated to the touch. But by applying gentle preſſure over the whole ſurface, it was eaſy to diſcover that the different parts of the tumour poſſeſſed various degrees of firmneſs. There appeared to be a perpetual and progreſſive increaſe of ſize, though the violence of the pain and the general irritability of the tumour, were by no means proportioned to the magnitude of the other ſymptoms. Even after they had attained a ſize far beyond what a caſe of white ſwelling ever attains, the pain was not ſo ſevere. The accompanying ſymptomatic fever likewiſe was much more moderate. In rapidity of growth however, they far exceeded any other ſpecies of ſwelling, as the moſt remarkable caſe which fell within my obſervation,

obſervation, arrived at its acme in the courſe of five or ſix weeks. It was then indeed of a moſt extraordinary ſize, meaſuring, in the circumference of its largeſt dimenſions, twenty-eight inches. At this period it is true, the ſymptoms were exceedingly diſtreſſing, and the patient ſuffered under the preſſure of hectic fever. In none of the caſes however, was there any ſuperficial redneſs of the ſkin, or any other ſymptom of inflammation.

Such are the external appearances of this ſingular complaint. When the ſubſtance of the maſs is cut into, to diſcover the nature of the internal ſtructure, it exhibits appearances obviouſly different from thoſe which are to be found in many other affections of the knee. The ſtate of the bones, in particular, bear the moſt marked diſtinction of character.

The head of the tibia is principally affected. In ſome caſes, it ſuffers a very conſiderable enlargement, and in others it appears

pears to be wholly conſumed. When it is enlarged there is not ſo much an increaſe of ſubſtance as a ſeparation of the lamella of the bone from one another.

The bone being thus ſo much extended, without acquiring any addition to the quantity of matter, it very much reſembles in ſtructure a piece of honeycomb; and, from the large ſize of the ſpaces, in proportion to the ſmall bulk of the materials, it becomes exceedingly fragile. Whether this great degree of fragility ariſes ſolely from the change in its mechanical ſtructure, independently of any morbid affection of the parts, is a point which I cannot as yet determine with accuracy. Though I am inclined to believe that the bone is alſo otherwiſe diſeaſed, ſince, upon endeavouring to make a dry preparation of a caſe of this kind, the whole enlarged portion of bone crumbled to pieces, and, in a ſhort time, nothing remained but that part of the tibia which had not been affected with the diſeaſe. There

is likewiſe this further difference between the diſeaſe which I now deſcribe, and a caſe of white ſwelling, that, in caſes of white ſwelling, the fibula, in no inſtance, ſuffers, whereas, in this anomalous diſeaſe, the upper part of the fibula is ſometimes included within the ſubſtance of the ſwelling, and wholly conſumed. The mode of conſumption, ſo far as my experience affords me an opportunity of examining it, appears to be this. The cancelli of the bone, by ſuffering an inordinate degree of diſtenſion, reduces the lamella to an extreme degree of thinneſs, which expoſes an extenſive ſurface to the action of the ſoft parts with which they are ſo intimately blended. Under theſe circumſtances they are conſumed, or incorporated with, or converted into, a ſimilar ſubſtance. Thus, in one way or other, the original diverſity of ſtructure comes at laſt to be entirely obliterated. The diſeaſe in the ſoft parts, to which the bone is every where contiguous, reſembles what has been vaguely indeed termed a ſcirrhous maſs.

maſs. It is almoſt tranſparent and colourleſs, and of a ſoft gelatinous conſiſtence, but poſſeſſing a ſufficient degree of firmneſs to retain its form when cut into ſmall pieces. There is no part of it in a fluid ſtate, and the whole maſs is nearly homogeneous, though ſome parts of it are rather firmer than others. But in none of the caſes, which have fallen within my notice, was there any tendency either to inflammation or ſuppuration. In one caſe, which, as far as I could judge, was of the ſame nature, and which I had an opportunity to examine in an incipient ſtate, the character of a ſcirrhous tumour was more diſtinctly marked. The ſurface was more irregular, with hard prominent diſcoloured knobs: The ſubſtance was firmer, though the pain was not intolerable. It began deep in the ham, and had already begun to ſurround the joint, before the limb was removed by amputation. An attempt had previouſly been made to extirpate the tumour near to the time of its commencement, but without

ſucceſs,

ſucceſs, as it returned again in about eighteen months. I conjectured this caſe to be an inſtance of the ſame diſeaſe in its incipient ſtage, though, when circumſtances only afford an opportunity to obſerve a diſeaſe in its extreme ſtates, at its commencement and termination, there may be ſome difficulty of aſcertaining the identity of the diſeaſe; nor will it be poſſible to arrive at more than probability on the ſubject until an uninterrupted ſeries of obſervations connects the extremes together.

This diſeaſe, of whatever nature it be, is always attended with the moſt imminent danger. No remedy, which has hitherto been tried, poſſeſſes the ſmalleſt power to check its progreſs. It, therefore, deſerves to be reckoned incurable, and likewiſe to be ranked as one of thoſe diſeaſes which always turns worſe when left to follow the natural courſe, and which, therefore, would, in all probability, terminate fatally in every caſe. Surgeons have, therefore, been induced

duced to anticipate the natural termination of the caſe by the removal of the diſeaſed parts; for, although amputation above the knee joint be always a formidable operation, yet the event is, upon the whole, ſufficiently fortunate to juſtify the attempt, as the patients were conceived to enjoy a better chance of recovery, by ſubmitting to the loſs of their limbs, than by allowing the diſeaſe to follow its natural courſe. But the unfortunate event of every caſe of the diſeaſe, in which this practice had been carried into execution, ſhowed how much the danger of the operation had been underrated; for, without a ſingle exception, every patient, on whom amputation was performed, died from the occurrence of haemorrhage. If, indeed, this haemorrhage had occurred only in a ſingle inſtance, it might have been imputed to negligence or to accident; but, as it unvariably occurred, in every caſe of the diſeaſe, and at very different periods from the date of the operation, one could not avoid referring it to the

the effect of ſome common cauſe. In one, but indeed the moſt ſevere inſtance of the diſeaſe which has fallen within my obſervation, the haemorrhage did not appear till thirteen or fourteen days after the date of the operation, which was two days after the ſpontaneous ſeparation of the ligatures which ſecured the arteries. During this long interval, there was abundance of time for the ſides of the artery to have formed a firm union, and to have been completely conſolidated, provided they had been in a ſound and healthy ſtate, and diſpoſed to heal in the uſual manner. To the effects of diſeaſe, therefore, we muſt impute the occurrence of the haemorrhage at this late period. In this inſtance, the preſence of diſeaſe was manifeſt, and excited a ſufficient degree of irritation to produce inflammation and ſuppuration in the groin, in conſequence of the attack having travelled along the courſe of the artery. The patient became hectic, and gradually ſunk under the preſſure of the attack; and his death

death might be aſcribed in part to the effect of fever, and in part to the loſs of blood occaſioned by the haemorrhage, both of which circumſtances were referrible to the morbid changes produced in the conſtitution by the effects of this ſingular diſeaſe. In conſidering the cauſe of this haemorrhage, it appeared probable, that the ſides of the artery had adhered together ſoon after the operation, but that the adheſion was ſo ſlight, and the tendency to conſolidate ſo feeble, that the impulſe of the moving current of blood was ſufficient to burſt them aſunder two days after the ſeparation of the ligature; for, upon inſpecting the parts by diſſection, there was no veſtige of eroſion; the ſubſtance of the artery had an unſound appearance, and near to the top of the thigh, it was ſurrounded by a collection of purulent matter, produced by unhealthy ſuppuration. From theſe circumſtances, and from the fatal event of all the other caſes, one ſhould ſuſpect, that this diſeaſe had a tendency to

affect

affect the ſtate of the arteries; and that, in conſequence of this morbid ſtate, the patients on whom the operation had been performed, had all fallen victims to the effects of haemorrhage, or of haemorrhage combined with ſymptomatic fever. The new caſe, which preſented in the incipient ſtage, proved more fortunate in the reſult, as the patient recovered from the amputation without ſuffering any unuſual diſtreſs. But in this caſe, ſuppoſing it of the ſame nature, the diſeaſe had not extended ſo far as to include the artery within the ſphere of its action, ſo that it was not morbidly affected.

With regard to the cauſe of this new and ſingular diſeaſe, I chooſe to be ſilent. For whatever diſcoveries may hereafter be made with reſpect to it, we are at preſent wholly ignorant of its nature and origin.

CHAP.

CHAP. VIII.

MOVEABLE BODIES.

ANOTHER ſingular complaint ariſes from the preſence of a moveable body within the cavity of the knee joint. The pain is often ſevere, comes on ſuddenly, and is at firſt not accompanied with any other ſymptoms of diſtreſs. In this ſtate, the patient only diſcovers the cauſe of the complaint from the accident of

feeling a ſmall hard ſwelling occaſionally on different parts of the knee. But after this diſcovery is once made, it becomes eaſy to comprehend in what manner the diſtreſſing ſymptoms are produced, and how at one time the patient is free from every kind of uneaſineſs, and at another ſuffers ſo much. For it is evident, that by mere change of place, the moveable body may occupy a ſituation which occaſions great irritation from preſſure, or it may be removed to a ſide ſo as not to be preſſed upon or felt at all. Upon this account, the attacks of pain are very variable, both in their degree of ſeverity and in the length of their duration. But if the moveable body continues long in a poſition which excites much irritation, then the violence of the ſymptoms perpetually increaſes, and occaſions a complaint of a moſt diſtreſſing nature, as the patient is quite unable to follow any occupation which requires the uſe of the knee joint.

Yet,

Yet, even under the moſt ſevere attacks, the patient in general obtains relief from pain while he remains at reſt. But this ſtate of eaſe continues only ſo long as he abſtains from uſing exerciſe, as the pain returns again immediately upon attempting to renew motion. Thus, occaſional attacks of violent pain is the only ſymptom which the preſence of a foreign body is certain to produce. For it is not neceſſarily attended with ſwelling or inflammation, or any other change in the appearance of the knee. In ſome caſes, indeed, the continuance of the irritation is followed by an evident change in the ſtate of the parts. Sometimes there is a ſlight degree of ſwelling attended with ſome deviation from the natural ſhape. And at other times there is evidently a quantity of fluid collected within the cavity of the joint; though neither of theſe ſymptoms are conſtant.

Thoſe moveable bodies appear to poſſeſs very different properties, and probably derive

derive their origin from very different cauſes. One kind is conſtantly found lying looſe in the cavity of the joint. Another kind is conſtantly attached *; and a third kind, by far the moſt common of any, is occaſionally attached but more frequently looſe. This laſt ſpecies conſiſts either entirely of cartilage, or of a bony nucleus covered with a ſuperficial layer of cartilage. And the origin of this ſpecies is not ſo eaſily traced. In ſome caſes indeed a portion of the original cartilage, apparently correſponding to the body which was found detached, has been found waſted away; though this circumſtance ſeems very much to be a matter of accident; ſince moveable bodies, in all reſ-

pects

* It may ſeem a ſoleciſm in language to ſpeak of a moveable body which is attached. But as its attachment is to the capſular ligament, and the ſubſtance of the body is likewiſe in ſome degree moveable, excepting in being found always in the ſame place, it has much of the character of mobility.

pects similar to the other, have been found within the cavities of the bursae mucosae. The discovery of them in the bursae mucosae, likewise leads me to doubt the probability of their arising from a portion of effused blood, which retaining its life, and adhering to the surface of the cartilage, has at last been converted into a substance similar to that to which it adhered. For had similarity of substance been a necessary consequence of their attachment, these bodies would not in this situation have been composed either of bone or of cartilage.

They are sometimes found covered with a fine membrane, which is provided with a number of blood-vessels, though this appearance is rather unusual. Their shape and size is variable. In general they assume the shape of a flatted oval, somewhat convex on one side, and concave on the other, and the largest of them measure nearly an inch in their longest dimensions. Though

bony

bony and cartilaginous bodies, they may all have been originally attached by a narrow peduncle. Yet in the more advanced periods of the diſeaſe, this attachment is certain to be broken off, ſo that ultimately they may be conſidered as foreign moveable bodies; and they are conſtantly found in this ſtate, when the diſeaſe becomes an object of attention.

That ſpecies which continues permanently attached from its commencement to its termination, is of a very different nature in all reſpects. It is ſo far from acquiring the ſolidity of bone, that it ſcarcely poſſeſſes any conſiderable firmneſs of conſiſtence. All thoſe inſtances of it which have fallen under my obſervation, occurred in caſes of white ſwelling, in which the internal ſurface of the capſular ligament was covered over with a lymphatic exudation. A part of this exudation had in ſome places projected above the level of the reſt, to the diſtance of three-fourths of an inch. It

was

was in ſome degree pendulous, for the neck, though not very narrow, was yet narrower than the general maſs of the ſubſtance. Upon examining the complaint externally, this excreſcence was diſtinctly perceived to poſſeſs ſome ſmall ſhare of mobility. The degree of firmneſs of its conſiſtence could not be accurately aſcertained on account of the interpoſition of the ſuperjacent parts, which in thoſe caſes, being ſomewhat thicker than natural, communicates to every ſubſtance, ſo deeply ſeated, very much the ſame feeling. Such a ſubſtance therefore has all the characters of a hard moveable body lodged within the cavity of the joint. It is indeed always to be found exactly in the ſame place, though upon preſſure it admits of ſome ſlight degree of motion. And however long it continues, it never ſeperates from its attachment to the ſurface of the capſular ligament.*

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* I have found the femur, in caſes of white ſwelling, ſurrounded with a prominent ring, which I conceived to be

The third ſpecies of thoſe moveable bodies is always found looſe, and never ſeems to have the ſlighteſt connection with the containing parts. The colour and conſiſtence of this ſpecies is always very different from that of the other two. No veſtige of diſtinct organization is ever to be traced in them. Their appearance very much reſembles a piece of ſpermaceti, or the white of an egg coagulated, and they ſeem to derive their origin from the inſpiſſation of a portion of the ſinoria. The portion which is inſpiſſated may act as a nucleus to attract more of the ſurrounding matter, and may thus receive perpetual augmentations of bulk to an unlimited extent. Hence it is readily underſtood, how this claſs of bodies increaſe in ſize; though it is no eaſy matter to conceive by what proceſs thoſe of a bony or cartilaginous

be of the ſame nature as the excreſcences, now under conſideration; though before amputation it had diſappeared, and could not be found upon diſſection.

cartilaginous nature, which have ſeparated from their attachment, can become larger, though this is aſſerted upon very credible authority.

All theſe three kinds of foreign bodies, however much they may differ from each other in leſſer points, agree together in their eſſential circumſtances; in particular, none of them have any tendency to admit of a ſpontaneous and radical cure; they all produce either inceſſant or increaſing irritation, or intermit only for a time, in conſequence of ſome change in their poſition. The intermiſſion, however, is ſometimes perfectly complete, and will laſt for a conſiderable time without interruption, though the length of its duration is quite accidental, or at leaſt depends upon circumſtances which it is not in our power to regulate. Upon the whole, therefore, the prognoſis, in all caſes of this diſeaſe, muſt be regarded as uncertain, or rather unfavourable.

It is an unfortunate circumſtance that none of theſe caſes afford any proſpect of obtaining a cure by reſolution; for even thoſe which have permanent attachments, and are of a ſofter nature, and, upon theſe accounts, ſeem the moſt likely to be cured by reſolution, are, in reality, the moſt intractable and moſt dangerous caſes. For, beſides the exiſtence of a moveable body, which excites irritation upon mechanical principles, the parts to which it adheres are always in a highly morbid ſtate.

The occaſional exemption from pain, which takes place in conſequence of the moveable body aſſuming a more favourable poſition, has ſuggeſted to ſome the expediency of attempting to remove the body into ſuch a poſition, and of retaining it there by means of regulated compreſſion. Accordingly this mode of practice has at times been tried with apparent ſucceſs: It is always ſafe; though it ſeems an uncertain point

point whether the relief which followed the trial was merely a matter of accident, or in conſequence of the aſſiſtance and ſupport which the preſſure of the bandage afforded. This practice, too, ſuppoſes it to be in our power to feel the moveable bodies at pleaſure, and to place them where we will, two conditions which certainly are not conſonant to fact; for, in the greater number of caſes, it is only at times that the body can be perceived, and then it cannot always be placed and retained in the ſituation which we wiſh. However, there is no objection to the trial whenever the circumſtances of the caſe are favourable for it; and, when this is determined upon, we endeavour, by dexterity of management, to remove the body from between the moving ſurfaces of the articulating bones, and, by means of bandages and compreſſes, to prevent it from falling down again, ſo as to incommode the patient in moving his joint. The failure of the attempt is not attended with

with any inconvenience, as the handling requiſite to accompliſh our purpoſe does not neceſſarily produce pain.

But if the attempt to cure the complaint, by the uſe of regulated preſſure, proves unſucceſsful, then the only alternative left in our option is, to remove the foreign body by exciſion. When this practice is reſolved upon, we have next to determine the prudence, practicability, and ſafety of the operation. The determination of this point will, in part, depend upon the nature of the caſe; for, in one claſs of caſes, thoſe, for example, in which the body to be removed is of a fleſhy conſiſtence, and adheres by a broad attachment to the inſide of the capſular ligament, the meaſure of making an inciſion into the joint is quite inadmiſſible, as it is neceſſarily attended with the moſt dangerous conſequences. The reaſon of this is obvious: Thoſe moveable excreſcences, as they have a broad attachment, cannot

cannot be removed by a ſimple inciſion, of whatever ſize it be. Hence, after the capſular ligament is laid open, it is ſtill difficult to complete the exciſion of the excreſcence without much trouble to the operator, and much diſtreſs to the patient. The operation, therefore, is always tedious and painful, and ſucceeded by a very violent degree of inflammation. Theſe circumſtances alone would render the operation dangerous, even although the parts wounded were in a ſtate of perfect health: It will be much more dangerous when the parts are diſeaſed; and, as the ligaments of the joint are in a very morbid ſtate in every caſe of this ſpecies of complaint, the conſequences of the operation muſt neceſſarily be much more formidable. There can, therefore, be no doubt in the propriety of declining to operate under ſo unfavourable circumſtances, as the patient is unavoidably ſubjected to much irritation without enjoying any proſpect of advantage. Indeed every

every caſe in which I have known the experiment tried has terminated unfavourably; I can, therefore, with more confidence condemn the practice as raſh and injudicious. As the line of practice, in thoſe caſes where the moveable body has an attachment to the inſide of the capſular ligament, is ſo obvious, we ſhould endeavour to diſcriminate the ſymptoms which diſtinguiſh them from thoſe of a different nature. In the firſt place, we ought always to examine whether there be any conſiderable ſwelling of the ſuperjacent parts; for although, in the other caſes, theſe parts may likewiſe ſuffer ſome degree of enlargement, yet neither the preternatural thickneſs, nor the morbid irritability, are nearly ſo remarkable. Beſides, this variety of complaint is often accompanied with obvious ſymptoms of white ſwelling. If, therefore, the body conſtantly preſent itſelf in the ſame ſituation, excite the ſame degree of irritation, and occaſion the ſame impediment

ment to the motion of the joint, we ought at leaſt to be cautious in attempting its removal by an inciſion into the capſular ligament.

On the contrary, when the body, by its frequent and ſudden change of place, ſhows that there is no attachment, when there is no other appearance of diſeaſe, and no pain, except what proceeds from the inconvenient poſition of the body, there is then no particular danger to be apprehended from making an inciſion into the cavity of the joint. In all caſes, however, even in the moſt favourable, this is to be regarded as a very formidable operation, which ought not to be undertaken, unleſs the urgency of the ſymptoms render the ſufferings of the patient intolerable; for although, on ſome occaſions, the opening of the capſular ligament be not followed by any inconvenience, yet, on others, it produces the moſt violent inflammation, and we

we cannot foreſee the peculiar circumſtances which regulate the ſeverity of the conſequential ſymptoms. It is, therefore, prudent for a patient to endure a conſiderable degree of pain and inconvenience rather than ſubmit to an operation ſo uncertain in its event. I have given this advice to patients who have come from a diſtance on purpoſe to have the body removed by exciſion. They have followed the advice; and I have had the ſatisfaction to find their forbearance attended with the happieſt effect, as afterwards they obtained a degree of eaſe which enabled them to execute the ordinary buſineſs of life without much inconvenience. But, if the urgency of the ſymptoms diſable the patient from taking exerciſe, and thereby diſqualify him from diſcharging his uſual occupation, and if his ſituation be ſuch as does not permit him to indulge in reſt and eaſe, then the doubtful chance of an operation becomes preferable to the certainty of perpetual confinement.

ment. Suppoſing an operation determined on, we then endeavour to perform it under the moſt favourable circumſtances. With this view reſt is to be recommended ſome days before hand, in order that any temporary and occaſional inflammation may have time to abate; and, if the patient be of a full habit of body, the exhibition of a doſe or two of ſome cooling aperient medicine, as an additional precaution. After premiſing theſe preparatives, we may ſafely proceed to the operation.

In ſelecting a place for operating, it is of conſequence to make the inciſion as far diſtant as poſſible from the moving ſurface of the joint. With that view the moveable body is to be puſhed upwards on the inſide of the thigh, and to be retained there ſteadily by the hands of an aſſiſtant. This part of the operation, indeed, is ſometimes difficult to execute; although it is of infinite importance that it ſhould ſucceed com-

pletely. For if the moveable body eſcape from under the fingers of the aſſiſtant, the object of the operation is entirely fruſtrated. Unluckily, too, it is one of thoſe accidents which we cannot certainly promiſe to prevent.

In performing the operation, it is an object of conſequence to prevent any irritation, which the admiſſion of air is ſuppoſed to produce. To accompliſh this point, the ſkin is to be drawn aſide from its natural poſition, ſo that, in making the inciſion, the wounds of the ſkin and capſular ligament correſpond only for a time, but upon permitting them to reſume their natural ſituations, the paſſage is again completely ſhut.

The length of the inciſion ought to be proportioned to the ſize of the body which has to paſs out. If it is made ſmall, as ſome practitioners have recommended, then greater force is requiſite to paſs out the body, by which

which means it runs a greater risk of escaping from under the fingers, and the lips of the wound have a chance of being bruised; two inconveniencies which it is of consequence to avoid. For although the irritation of the bruise may not be considerable, yet it always tends to increase the risk of symptomatic inflammation. When the incision is made, the body ought either to be caught hold of by a sharp pointed hook, or the blunt end of a probe to be inserted beneath. But, which ever way we adopt, we must employ the greatest care to prevent any risk of its slipping away.

When the presence of a foreign body has produced an increased secretion from the surface of the capsular ligament, which occasions a swelling of the knee, then this collection is to be evacuated at the same time the body is taken out. It is often glairy like the white of an egg, and comes out in one mass. But if the glandular surfaces

faces have acquired a morbid habit of action, a preternatural quantity continues to be ſecreted, which gives origin to a new collection. In this caſe, it becomes a queſtion, how far it is expedient to keep the wound open, in order to prevent a future accumulation. But although this meaſure promiſes ſome advantage, I yet eſteem it a preferable practice to cloſe the opening immediately, in hopes that the effuſion will be reabſorbed. Becauſe, any means which can be employed to keep the wound open are neceſſarily attended with conſiderable irritation, and experience has ſhewn, that an accumulation, under theſe circumſtances, may in general be re-abſorbed by the uſe of diſcutient applications. For as the tendency to increaſed ſecretion is the conſequence of an accidental irritation, it is not neceſſarily permanent.

There is likewiſe another point of difficulty which ſometimes occurs to be determined

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in practice. In certain cases, there is more than one body present in the joint, when it becomes necessary to remove all of them, otherwise the operation is but incompletely performed. But should they happen to lie on the opposite sides of the joint, without a possibility of bringing them all to the same side, the question is whether we ought to make the two incisions at one time or at different times. One might be afraid that two contemporary wounds would be more hazardous than two distinct operations performed at different times. Experience however shows that this method may often be adopted with safety. Perhaps, indeed, no general rule can be laid down to be invariably followed on all occasions. In part, we must be governed by circumstances; and if the first wound excite no pain, if the operation be not tedious, and give little trouble, then we may proceed immediately to operate upon the other; on the contrary, if the parts prove irritable, and the operation

tion tedious and difficult, it will be prudent to delay proceeding farther.

After the operation, the lips of the wound are to be brought together; and, if no untoward circumstance happens, the cure will be completed in a fortnight or three weeks.

CHAP.

CHAP. IX.

GENERAL PROGNOSIS

OF

AFFECTIONS OF THE KNEE JOINT.

THE predictions which we are entitled to deliver in cases of morbid affections of the knee joint, depend as much upon the nature of the complaint as upon the severity of the particular attack. For in some kinds of affections, in the rheumatic for instance, the most severe attacks are attended with little danger. While on the contrary,

contrary, caſes of white ſwelling, and more eſpecially caſes of that anomalous affection, which I have mentioned as conſtituting a diſeaſe hitherto undeſcribed, are formidable, and portend danger in the ſlighteſt form under which they appear ; ſo that the ſpecies of the complaint, as well as the violence of the ſymptoms, muſt be taken into account before we can venture to give an opinion upon the ſubject. It will therefore be proper to beſtow a ſeparate conſideration to the different affections.

I ſhall begin with conſidering the ſubject of white ſwelling, as it merits particular attention, on account of its importance and frequency.

In the preceding hiſtory of the diſeaſe, I have before had occaſion to obſerve, that an attack of white ſwelling is always a very ſerious complaint, even in its mildeſt form. And that from the moment of its commencement the danger continually increaſes,

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in proportion as the diſeaſe advances in its progreſs; although all hopes of recovery become deſperate only in the later ſtages. However, as the degree of danger, which attends particular periods of the attack, may be conveniently explained, when treating of the method of cure, I ſhall embrace that opportunity to introduce ſuch obſervations concerning the prognoſis as I think neceſſary.

CHAP. X.

METHOD OF CURE

OF

WHITE SWELLING.

FROM the very ſerious conſequences of a formed attack of white ſwelling, and the very inſidious manner of its approach, a ſurgeon cannot be too watchful and ſuſpicious whenever a patient complains of uneaſineſs about the knee joint. For although the alarm may prove entirely groundleſs, yet it conſiſts more with prudence

dence to ſubject the patient to the inconvenience of unneceſſary precaution than to expoſe him to the riſk of allowing the diſeaſe to gain ground, by neglect or delay. In all ſuch caſes therefore, however ſlight in appearances, it is adviſable to recommend reſt, till the progreſs of the attack affords an opportunity to form a poſitive opinion concerning the nature of the complaint. And if all uneaſy feelings ſoon diſappear, under the ſimple mode of management, there is then no more to be done, and no reaſon to be apprehenſive of any bad conſequences in future. But, if inſtead of yielding ſo rapidly, the patient continue to be diſtreſſed, with feelings of uneaſineſs and weakneſs, for a longer time than what correſponds to the original mildneſs of the attack, the caſe then deſerves to be regarded in a ſerious light, and the patient cannot be ſo confident in his hope of remaining free from a relapſe. His conduct therefore requires greater circumſpection, in order to avoid every circumſtance which might

might induce a return of the complaint. In this ſituation of delicacy, fatigue from over exertion and expoſure to cold and wet, are likely to endanger a relapſe; ſo that the patient ſhould be very much on his guard for a conſiderable time after every veſtige of the diſeaſe has been removed. But with theſe precautions, he may conſider the cure to be compleat.

In a decided attack of white ſwelling, under the ordinary form of commencement, where there are partial ſwellings, accompanied with local circumſcribed pain, a ſmall number of leeches, four or five, ought to be applied to the affected part; and it is better to repeat ſmall bleedings frequently than to withdraw a large quantity of blood at once, becauſe the inflammation is more of an indolent and chronic nature than active and healthy, ſo that any great and ſudden evacuation operates more forcibly in weakening the patient's ſtrength than in ſubduing the complaint. Along with the occaſional

occaſional repetition of ſmall bleedings, the uſe of cold medicinal applications is of eſſential ſervice in this ſtage of the attack. Nothing anſwers the purpoſe better than a watery ſolution of the ceruſſa acetata, with the addition of a ſmall proportion of vinegar. The cloths which are impregnated with this ſolution ſhould be kept conſtantly wet and conſtantly applied; but the frequency of the repetition of the leeches muſt be regulated by the violence of the pain, by its duration, and by the frequency of its action; and, whenever the pain entirely ceaſes, there is no longer occaſion to take away more blood; neither is there occaſion for any other local treatment of the caſe during the incipient ſtage of this form of the attack.

With regard to the management of the patient's general health, the nature of the complaint does not require that much ſhould be done; for there is no conſtitutional fever preſent during this period; and

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any practice which has a tendency to impair the patient's ſtrength would be improper. It is, therefore, ſufficient to keep the belly open by the uſe of gently aperient medicines, and to enjoin a moderate manner of living. In all caſes, however, it will be requiſite to prohibit the uſe of wine and ſpirits for a time; but whether it will likewiſe be requiſite to extend this prohibition to the uſe of animal food will depend, in part, upon the habits and conſtitution of the patient. There is, however, no doubt in the propriety of being ſparing in the uſe of animal food, and of being contented to take it once a-day at dinner in moderate quantity.

The form of attack, which I have now deſcribed, is the one to which the local detraction of blood is applicable with greateſt propriety during its incipient ſtage, as it is the one in which the exiſtence of inflammation is moſt obvious and certain; for, in that other form of commencement which

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is characteriſed by the greatneſs and rapidity of the ſwelling, and in which the knee ſuddenly attains a large ſize from the copious effuſion of a lymphatic fluid, the exiſtence of inflammation is obſcure and uncertain, at leaſt the ſtate of relaxation ſeems to predominate ſo much over the ſtate of inflammation, that the neceſſity of local blooding no longer exiſts. Beſides, any ſmall degree of inflammation, which may be preſent, appears to be ſo deep ſeated that no moderate detraction of blood from the ſurface could be ſuppoſed to produce much effect through ſo great a thickneſs of ſubſtance. It farther appears, that, in thoſe caſes, the ſwelling approaches more nearly to the nature of what has been termed (I do not ſay with what propriety) a cold aedematous defluxion. In every view of the caſe, therefore, there is little good to be expected from the detraction of blood; on the contrary, we may hope to derive benefit from remedies poſſeſſing very different virtues, and, in purſuance of that idea, ſhould

ſhould have recourſe to the uſe of aſtringent and ſtimulating applications. Accordingly, it is on this claſs of remedies I chiefly rely for a cure, and have found, by experience, that they anſwer the purpoſe beſt. They may be ſelected from the vegetable or mineral kingdom. Of vegetable aſtringents, the decoction of oak bark proves the moſt powerful; and, among the mineral, I have employed the vitriolic ſalts, alum, and vitriol of zinc. But a combination of two of them, a decoction of oak bark, with the addition of alum, is the preparation which I prefer. Whatever remedy is uſed requires to be conſtantly applied.

In theſe caſes, too, as there are ſtill fewer traces of an inflammatory tendency, there is leſs reaſon to reſtrict the patient in the articles of diet, yet, while we are anxious to guard againſt the debilitating effects of lowneſs, we ought to be equally cautious to avoid exciting a temporary fever, which, in weak and irritable habits, is apt

apt to ariſe from indulgence in the ſmalleſt exceſs.

I have before noticed, that this is the form of attack moſt rapid in its progreſs, though, upon the whole, I do not think it the moſt dangerous, as the caſes often terminate favourably by a reſolution of the ſwelling. I muſt, however, except caſes of women in childbed, with whom the attack has uniformly proved unfortunate in all the caſes which have occurred in my practice.

There is one variety in this form of attack which merits particular conſideration. It occurs, in conſequence of external violence, to perſons prediſpoſed to white ſwelling. Soon after the violence has been received, the knee ſwells to a very large ſize; the ſwelling is tenſe and painful but not very firm. To examination by the touch, it preſents an obſcure ſenſe of fluctuation, but there is no diſtinct perception of a collection of matter, which, indeed, could not be

expected to be felt, as the ſwelling is produced merely by a general effuſion into the cellular ſubſtance. This train of ſymptoms is not the uſual effect of violence upon the knee of healthy people; it ariſes only in perſons of unſound, or, at leaſt, ſuſpicious, conſtitutions.

The origin of the attack would lead one to infer the preſence of active inflammation, while the large ſize of the ſwelling indicates a great degree of relaxation. On account of this combination of circumſtances, the caſe ſeems more of a mixed nature than the form of attack before deſcribed, and, conſequently, the indications of cure are more doubtful and uncertain; for, upon the ſuppoſition of an exiſting inflammation, a ſurgeon will naturally begin with preſcribing topical detraction of blood. Proceeding upon this idea, I have tried the effect of leeches, but was diſappointed in my expectation of procuring relief, as the evacuation of blood neither produced an abate-

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ment of the ſwelling, nor a diminution of the pain. The uſe of cold aſtringent ſolutions anſwered no better. At laſt the application of a large bliſter relieved the pain, and removed the ſwelling in a wonderfully ſhort time, ſo that the patient perfectly recovered all the functions of the joint. And, from all my experience in caſes of this kind, I ſhould lay it down as a maxim, that the application of large bliſters is the remedy beſt adapted to cure them. They are certainly the claſs of caſes in which the uſe of bliſters is the moſt requiſite in their incipient ſtate. In contemplating the completeneſs and celerity of the cures which ſo often take place in this form of attack, it ſeems probable that the largeneſs of the external ſwelling relieves the internal parts, ſo that once the ſwelling is completely ſubdued, no further veſtige of diſeaſe remains. And it is conſonant to common experience to find a copious diſcharge from the ſurface the moſt efficacious

cious means of procuring a diminution of a lymphatic effuſion.

If the means of cure employed in this early ſtage of white ſwelling ſucceed agreeably to expectation, then all diſtreſſing ſymptoms of the complaint ſoon diſappear, nothing being left behind but a degree of weakneſs, which likewiſe goes off by care and attention on the part of the patient.

But if the complaint, inſtead of yielding to the firſt application of remedies, continue to gain ground, there is then much reaſon to be anxious for the ultimate event of the caſe. In this period of the attack, indeed, the ſymptoms frequently remain ſtationary for a conſiderable time, without undergoing any ſenſible aggravation or diminution in their violence. And as the nature of the complaint remains preciſely the ſame, although it attain more violence, or threatens to prove more obſtinate, there is not as yet an urgent neceſſity to make

a total change in the line of practice. I have before mentioned, that any copious detraction of blood does not correſpond with the nature of the complaint, though it may ſtill be prudent to apply a few leeches occaſionally to any ſpot which is painful, provided that ſpot be of limited extent. If thoſe ſmall bleedings prove ineffectual, after frequent repetition, there is then no encouragement to perſiſt longer in the practice.

But, while it may be adviſable to perſevere in the occaſional repetition of ſmall bleedings, there is not equal neceſſity to continue the ſame external application. So that if the complaint appears to gain ground, notwithſtanding the uſe of the cold ſaturnine ſolution, I ſhould then approve of varying the practice, and of ſubſtituting fomentation with warm ſtupes. This mode of treating white ſwelling is highly extolled by many practitioners of great reſpectability, eſpecially by the ſurgeons of the French ſchool.

ſchool. The ſucceſs indeed which they aſcribe to the practice far exceeds any effects which it has been found to produce in this country; a difference which may poſſibly ariſe in part from the ſuperior mildneſs of the diſeaſe in the climate of France. For although I have often found the practice of warm fomentations highly uſeful, yet the permanent good effects of theſe were neither ſo conſtant nor ſo remarkable as what the repreſentation of the French ſurgeons would lead one to expect. It frequently, however, ſerves to alleviate pain, to diminiſh irritability, and ſeems in ſome caſes to contribute eſſentially to the cure of the complaint. The ſucceſsful caſes, which have come under my obſervation, were chiefly thoſe in which there was a general ſoft ſwelling in the lower part of the thigh, which covers the upper part of the knee joint. The cures were compleat and permanent. And although the practice ſhould not ultimately produce a radical cure, yet it is in general attended with the advantage of procuring

procuring temporary relief from pain and irritation. So long therefore as theſe are the effects, we may be confident that the warm fomentations are uſeful and ſalutary, and therefore that it is ſafe and proper to continue the uſe of them. But whenever the uneaſy ſymptoms return, which ſhews that the efficacy of the fomentations is ſuſpended or gone, there is then indeed little farther benefit to be expected from perſevering in the practice; and this therefore may be regarded as the proper and natural period to lay aſide our confidence in it.

The fomentations which I have in general employed, were compoſed of chamomile flowers, and applied in the form of ſteam, as hot as the patient could bear. It is neceſſary to repeat the fomentations three or four times a day, and to continue every application for nearly half an hour, taking particular care to renew the flannels, whenever they become in the leaſt cold, in order that the patient may enjoy the full benefit of the heat. Warm ſalt water is often employed in ſuch caſes, though I do not

not know that it poſſeſſes any ſuperiority over the decoction of chamomile.

The warm fomentation is ſometimes allowed to fall from a height, in the perſuaſion that this mode of application is more efficacious. But I do not know that this opinion is ſupported by experience, and I can perceive no juſt ground of preference, from any conſideration which I have been able to beſtow upon the ſubject. On the contrary, there is one circumſtance in which it ſeems evidently inferior. For, according to the practice which I have recommended, the fomentation is applied in the form of warm ſteam, but, when allowed to fall from a height, it muſt neceſſarily be applied in the ſtate of a watery fluid, whoſe ſalutary operation is not nearly ſo powerful.

During the employment of the warm medicinal fomentations, it is uſual to anoint the knee with ſome emollient ſubſtance. Hog's lard and olive oil form the baſis of theſe

theſe applications. The knee is kept conſtantly covered with them, and wrapt up warmly in flannel. They are not applications of great activity, ſo that it is not eaſy to appreciate their virtues, though as they contribute to keep the parts warm, and to ſupport a gentle moiſture on the ſurface, and as the complaint ſometimes gets well under this courſe of management, there is reaſon to think favourably of the practice. When theſe oleaginous ſubſtances are employed pure, they act entirely as emollients; and it would be inconſiſtent with the intention of the practitioner to impregnate them with any ingredient which poſſeſſed a ſtimulating quality. Other medicines do not add much to their efficacy; camphor and opium are thoſe moſt commonly employed. Opium, however great the proportion, certainly does not irritate when uſed as an external application; and though camphor, in large quantities, is undoubtedly ſtimulating, yet, when only a ſmall proportion is added, it produces no

ſuch effect. The addition of theſe ingredients, therefore, is perfectly ſafe, though, in my opinion, not very eſſential.

If, under this method of cure, the ſymptoms of the complaint begin to abate, or if they even continue ſtationary, there is certainly no room to make any change in the practice, at leaſt for a conſiderable time; though, if the caſe prove very ſlow in its progreſs, there may be no indication to perſiſt in the occaſional repetition of the local bleedings all the while that the treatment with emollients and warm fomentations is continued. I have, however, remarked before, that if, in place of yielding or remaining ſtationary, the ſymptoms increaſe in violence, or if, after a temporary abatement or ſuſpenſion, they return and become more ſevere, there is no longer grounds to confide in this line of practice. When the diſeaſe arrives at this ſtage, every practitioner endeavours to relieve the internal parts by procuring ſome change in the actions

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of thoſe which are ſuperficial. The object of practice, therefore, is either to excite an irritation on the ſurface of the ſkin or to produce and ſupport a conſtant diſcharge of matter. All applications which are employed for theſe purpoſes poſſeſs ſtimulating qualities, though they operate with different degrees of activity, as ſome of them only produce ſlight irritation on the ſurface of the ſkin, while others excite a high degree of inflammation, followed by veſications and a copious and permanent diſcharge of purulent matter.

Among this variety of applications, it was not unreaſonable to expect, that ſome one might be found poſſeſſed of ſpecific virtues, by which it was peculiarly adapted to counteract the effects of the diſeaſe. I am not, however, acquainted with any one which merits this character; for, although there undoubtedly be ſome diverſity in their mode of operating, yet this diverſity is neither ſo conſpicuous nor ſo appropriate

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as to be of particular uſe in practice. Some practitioners, indeed, expect to derive ſingular benefit from the ſpecific powers of mercury, but my experience on the ſubject does not warrant any ſuch expectation. And, indeed, if the idea be juſt which ſuppoſes that there is an intimate connection between a caſe of genuine white ſwelling, and a ſcrofulous taint in the patient's conſtitution, there is no encouragement to truſt to mercury for a cure, as I believe no fact is better eſtabliſhed in practice than that the ſpecific effects of mercury are extremely injurious in all caſes of ſcrofula.

With this view of the ſubject then, there is no alternative left but to ſelect thoſe remedies which are, upon the whole, found to be the moſt ſerviceable. And, as no one is ſo decidedly ſuperior to all the others as to deſerve the preference on every occaſion, it is frequently convenient to vary the application, not only from the chance of one agreeing better than an other, but likewiſe from

from the manifeſt advantage of making a change in an application to which a part has been long accuſtomed, and has thereby become more inſenſible to its effects. In enumerating the principal ſtimulating remedies, I ſhall begin with taking notice of an application which conſiſts of powder of gum ammoniac moiſtened with vinegar of ſquills, as I believe it to be one of the moſt uſeful of the claſs. The mode of uſing it is by making the compoſition into a paſte, which is ſpread upon leather, and applied to the knee in a piece of ſufficient ſize to cover the whole of the affected parts. It excites a ſlight ſenſation of heat which is ſeldom ſo great as to feel diſagreeable, and there is ſcarcely any ſuperficial redneſs or diſcharge produced. Some ſlight inconvenience, however, ariſes from the induration of this plaſter, which becomes hard in a ſhort time, and adheres to the ſkin after a diſagreeable manner Upon this account, it is neceſſary to remove it frequently, in order to replace it with freſh materials,

rials, or to moiſten the ſurface by the effuſion of ſome freſh vinegar of ſquills. But by proper attention to guard againſt this tendency to indurate, all theſe troubleſome conſequences may be avoided, and then the application often proves of ſingular ſervice in removing the complaint. I have known many inſtances in which the patients derived great and ſpeedy benefit from the uſe of this remedy. Indeed, the advantage of the practice is ſo conſiderable and ſo general, that it deſerves to be recommended with ſome confidence in this ſtage of the complaint. It is obvious, however, that, during the application of this, or any permanent plaſter, there is no room to employ friction; ſo that other ſtimulating remedies, which are applied after a different manner, enjoy a degree of ſuperiority in this reſpect. All ſtimulating compoſitions, in which oily ſubſtances conſtitute a principal part of the ingredients, are of this kind; and of theſe there is a conſiderable variety. That moſt commonly uſed, conſiſts

ſiſts of a combination of aqua ammonia and olive oil, in the proportion of one part of ammonia to two of oil, though the proportion may be varied according to its effects. It is a preparation which is eaſily compounded, and extremely convenient. Another of thoſe ſtimulating remedies is compoſed of the diſtilled oil of turpentine and hog's lard mixed together in equal parts. The only other application of this kind which I ſhall mention at preſent, is the empyreumatic oil obtained from amber by diſtillation.

All theſe remedies agree in the general property of ſtimulating the parts to which they are applied, eſpecially when friction is employed to aſſiſt in their application; for friction not only favours the more accurate application of the medicine to the little inequalities of ſurface, but likewiſe ſeems to promote the penetration of it into ſome little thickneſs of ſubſtance, and in this way contributes to increaſe the activity of

of its virtues. Beſides this, the mere mechanical effects of friction conduces to the ſame end of procuring a diſcuſſion of the ſwelling, as it certainly has a manifeſt tendency to promote the abſorption of ſuch kinds of effuſions. I ſhould, therefore, recommend the frequent, continued, and aſſiduous uſe of friction, whenever the oleaginous ſubſtances are the claſs of remedies employed. It does not even ſeem prejudicial to the cure to exert a degree of force, which, at every inunction, excites ſome temporary uneaſineſs; at leaſt it is undoubtedly advantageous, that the parts ſhould be ſenſibly warm from the conjoint action of the medicinal application to the friction. In order to enjoy the benefit of this practice in its full extent, it is neceſſary to renew the application two or three times a-day, and to continue the friction for half an hour each time. After the inunction is finiſhed, the parts are to be well covered with ſoft woollen cloth, and the patient kept at reſt till the time of the next inunction.

tion. The ſame kind of management is alike applicable to the different remedies mentioned above; for they all act upon one common principle; and although it may be adviſable to vary the application occaſionally, yet the variation is made more from the expectation of deriving benefit from a change than from any conviction of one application poſſeſſing an acknowledged ſuperiority over the others. It is upon this account that I have conſidered all the remedies of this claſs in one group; for to treat of them ſeparately would only lead to unneceſſary repetitions, as the ſame practical obſervations are applicable to all of them, and likewiſe to ſeveral other remedies of the ſame ſort, which it would be ſuperfluous to enumerate in detail.

If this line of practice procures permanent abatement in the violence of the ſymptoms, there is then every reaſon to expect

a favourable termination; but, if little or no amendment take place, or if it be but tranſient, the caſe then wears a more ſerious aſpect every day, and requires the uſe of the moſt active and powerful remedies.

Before, however, I diſmiſs the ſubject of ſtimulants, I ſhall offer a few remarks on the effects of electricity, as every circumſtance in its mode of action ſhows that it belongs to this claſs of remedies. It does not, however, ſeem to poſſeſs any ſpecific virtue, and is inferior, in point of efficacy, to ſome of the more powerful and permanent ſtimulants which I have already mentioned. I do not, therefore, regard electricity as a very uſeful remedy in the cure of white ſwellings, having ſeldom ſeen it produce any good effect. The only inſtances in which it appeared to be any way ſerviceable, were either ſomewhat anomalous, or of an indolent and chronic nature; and even in theſe caſes, the diſeaſe was not far

far advanced in its progreſs. But although I do not ſet a high value upon electricity, or expect much benefit from uſing it, yet, in affections which are tedious and ſtationary and anomalous in their nature, or which ſhow a tendency to rheumatiſm, electricity deſerves a trial, eſpecially if the proper uſe of the ordinary remedies have previouſly failed of ſucceſs.

The only other claſs of remedies, which remains to be conſidered, are thoſe which produce a diſcharge of purulent matter. They all operate upon the ſame principle, and nearly after the ſame manner, though ſome difference in the mode of uſing them occaſions conſiderable variation in their effects; for a diſcharge of this kind may either be temporary or tranſient; it may be from a limited or extenſive ſurface, and it may be made from the ſurface immediately over the region of the diſeaſe, or from a ſpot in the vicinity. And all theſe different circumſtances require to be taken into

to conſideration in explaining this important point of practice.

The inſertion of iſſues, in the vicinity of the knee joint, appears to be the moſt ancient method of treating caſes of white ſwelling. They are employed with a view to make a permanent drain, and are commonly inſerted at the upper and outer part of the leg, between the fibula and tibia. Their extent is not great, and, conſequently, the diſcharge from them not very conſiderable. They are, in general, formed by making a longitudinal inciſion in the ſkin and cellular membrane, capable of containing three or four peas of an ordinary ſize. With regard to their effect in removing the complaint, or even in alleviating the ſymptoms, I have not found it to be great, therefore I do not place much value on this method of eſtabliſhing a drain. In ſome caſes, indeed, ſuch iſſues are of ſervice, although they ſeem more adapted to prevent the return or aggravation of an attack

tack of white ſwelling than to accompliſh a radical cure. On this account, it may be prudent to inſert them in caſes which are of moderate ſeverity, tedious, or ſtationary, or when the violence of the attack has been already ſubdued by the uſe of more powerful means; for theſe are the circumſtances under which iſſues of this kind are moſt likely to prove beneficial. I know, indeed, that many practitioners of great reſpectability expect to derive greater advantage from ſuch iſſues; but, as my experience does not lead me to form ſo favourable an opinion of their virtues, I do not think it adviſable to employ them at the riſk of omitting or delaying the uſe of any other practice which has a chance to be more effectual.

Mr Pouteau of Lyons recommends a particular method of eſtabliſhing an iſſue which he extols as far ſuperior to thoſe in common uſe. It conſiſts in forming a ſuperficial ſcar upon the knee, by means of a ſmall cone of teazed cotton, whoſe baſe is little

little more than an inch in diameter, and which is ſet on fire and conſumed. This is all the peculiarity of Mr Pouteau's practice, which does not ſeem to me to poſſeſs any advantage over the more familiar methods of accompliſhing the ſame object. For the ſole object in view is to procure a permanent diſcharge of purulent matter by ulcerating a limited portion of ſurface. And it certainly ſignifies nothing, as to the ultimate effects of the diſcharge, by what means the ulceration has been originally produced. I therefore regard this practice as eſſentially the ſame with any other which propoſes to form a ſmall iſſue over the ſite of the diſeaſe, and that its merit is to be eſtimated by the ſame principles. The place of the iſſue being immediately over the diſeaſe, is unqueſtionably preferable to a more remote ſituation; and, in ſo far, Mr Pouteau's practice is commendable. But the peculiar method of forming the iſſue ſeems to me a mere conceit, and the ſize of it is too inconſiderable to anſwer the purpoſe effectually;

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at leaſt I have never found a caſe of much importance yield to this method of treatment; I therefore conſider it as entitled to a much ſmaller degree of confidence than what Pouteau repreſents. It is true, the event of the caſes which he reports is moſt wonderfully ſucceſsful; but, for my part, I am inclined to aſcribe the uniformity of the ſucceſs more to the mildneſs of the diſeaſe than to the excellence of the practice, for I cannot conceive that the ſame practice, which proves ſo unvariably ſucceſsful in France, ſhould ſo frequently diſappoint our expectations here, ſuppoſing that, in both places, the diſeaſe exiſts in an equal degree of malignity. There are, beſides, many reaſons for believing that every kind of ſcrofulous affection is much milder, and more eaſily cured, in the ſouth of France than in any part of Great Britain.

After having mentioned it as a matter of indifference by what means the irritation and diſcharge is produced and ſupported, it

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is hardly neceſſary to ſay much concerning the practice of forming an iſſue by the introduction of a ſeton; for, as the diſcharge procured by a ſeton is ſeldom conſiderable, and the management of it frequently troubleſome, there is no preference due to it; and, if it ſhould penetrate to any great depth, there is a riſk of irritating and exciting inflammation among parts where ſuch an effect is likely to be attended with dangerous conſequences.

I, therefore, cannot approve of, and, indeed, am rather ſurpriſed at, the boldneſs of thoſe practitioners who have ventured to paſs a ſeton through the cavity of the knee joint, as it is not eaſy to conceive upon what principle this attempt is made, or from what circumſtances it can be expected to produce any beneficial change. I never met with more than one inſtance in which this practice had been carried into execution, and there certainly was no reaſon to boaſt of its ſucceſs; but, as the patient did not

not come within my notice till a late period of the diſeaſe, after all hope of recovery was entirely paſt, I am unwilling to make any remarks which might imply cenſure upon the practitioner who adviſed the experiment. For, if the caſe was deſperate before the ſeton was introduced, although in my opinion the practice was wild and unreaſonable, and could not be expected to do good, yet it would be uncandid to impute the unfortunate termination of the complaint to the introduction of the ſeton.

But of all ſubſtances which are uſed for the purpoſe of ſtimulating the ſurface, and of producing a diſcharge of matter, bliſters of cantharides are the moſt powerful, the moſt certain, and the moſt compleatly under management. Upon theſe accounts they are the moſt convenient applications, and the moſt univerſally employed in ſevere and advanced caſes of white ſwelling. The variations which the uſe of them admits of reſpects their ſize, the frequency of repe-

tition, and the length of time for which the ſuppuration is continued. Theſe different points of practice require to be modified according to the nature of the object which we have in view to attain. For as it rarely happens, that caſes of importance, or long ſtanding, yield to the application of a ſingle bliſter, it becomes a matter of conſideration to determine whether it be preferable to cover the whole of the affected parts with a large bliſter, or to be contented with one of moderate ſize, in the view of bliſtering the other half of the knee ſoon after the firſt bliſter is removed. If this be the practice in contemplation, it is ſufficient that the firſt bliſter be large enough to cover one half of the ſwelling, as the other half is to be bliſtered when the firſt bliſter is healing; and thus by applying a ſucceſſion of bliſters alternately to the two ſides of the knee, one part of the ſwelling is kept perpetually under the impreſſion of a bliſter.

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This method of employing bliſters muſt evidently be very powerful, provided we perſevere in it for a ſufficient length of time. Accordingly, I have known many inſtances of excellent cures performed by treating ſevere caſes of white ſwelling after this manner. It is therefore a line of practice which deſerves to be rated high in the ſcale of eſtimation. But although I reckon it ſo highly uſeful, when continued with ſufficient ſteadineſs, I do not prefer it to the eſtabliſhment of a permanent and copious diſcharge from a more extenſive ſurface. For, by this means, the operation of the ſtimulating and ſuppurating application is rendered ſtill more efficacious. Upon the whole, therefore, the moſt ſpeedy, powerful, and effectual practice, is to apply a large bliſter over the whole ſurface of the ſwelling, and to keep the greateſt part in a conſtant ſtate of diſcharge, till the complaint relent. The time requiſite to accompliſh this object will vary according to the circumſtances of the caſe, though no conſiderable amend-

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ment can well be expected to take place in leſs than ſome weeks. We ought not then to deſpair in a hurry, nor to relinquiſh the practice from premature diſappointment. For as we have no better to ſubſtitute in place of it, we may be ſaid to abandon the patient to his fate the moment that our ſteadineſs deſerts us. I am therefore decided in the neceſſity of continuing the approved practice with the moſt unremitting perſeverrance. And whether we adopt the practice of employing an alternate ſucceſſion of ſmaller bliſters, or the application of a large one, with a determination to keep it in a conſtant ſtate of diſcharge, we ought always to remember that this is a laſt reſource which we cannot abandon with ſafety. Therefore, no falſe motive of humanity, no importunate ſolicitations of the patient, no impatience on the part of his friends, ſhould induce us to deviate from that line of practice which our experience, our judgment, and mature deliberation has pointed out as the moſt promiſing. We may, indeed, be accuſed

cuſed of wanting the feeling of compaſſion by thus obliging a patient to endure ſo much diſtreſs for ſo great a length of time. But, notwithſtanding all the appearance of harſhneſs and ſeverity, I am thoroughly convinced, that this practice never has been puſhed to an improper exceſs by any regular practitioner; while many inſtances might be brought forward to prove that patients have ſuffered material injury from their own unſteadineſs, or from want of perſeverance on the part of their adviſers. There is no danger that our exhortations will prevail ſo far over the natural reluctance of a patient to bear pain, as to perſuade him to undergo a tedious and painful method of cure, which has a chance to prove injurious from its ſeverity and duration.

But while I am ſo ſtrenuous an advocate for this line of practice, I do not aſſert the impoſſibility of exciting an attack of inflammation, on the ſurface of the knee, which from its violence and extent may be attend-

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ed with danger, though I am confident that every cautious and well informed practitioner will have too much prudence to fall into this error.

I have thus ſtated my opinion reſpecting the expediency of ſupporting an uniform and copious diſcharge of matter, from an extenſive ſurface, for the cure of advanced and inveterate caſes of white ſwelling, but I have ſaid nothing of the difficulty which attends the execution of the deſign. It is often, however, no eaſy matter to procure a ſubſtance which will anſwer the end in view. For the ſtimulating ointments prepared from cantharides poſſeſs certain diſadvantages. In the firſt place, we have no certain controul over the profuſeneſs of the diſcharge, as the ſurface of the ſore is ſometimes much irritated, and ſometimes covered with a white tenacious exudation, and the patient is often attacked with a moſt diſtreſſing ſtrangury, eſpecially when the application is extenſive and long continued. Theſe inconveniencies form a very ſerious objection

objection to the uſe of thoſe iſſue ointments, in which ſome preparation of cantharides forms the principal ſtimulating ingredient.

But equal or perhaps ſuperior advantages may be obtained by employing ointments compoſed of different materials. The leaves of the Savine, for inſtance, can be prepared ſo as to anſwer every good purpoſe in view. Accordingly, an ointment of this kind has of late been introduced into very general uſe, upon the recommendation of Mr Crowther. It produces a very copious diſcharge for a great length of time, and is not liable to the objection of exciting ſtrangury. I have not indeed enjoyed thoſe advantageous opportunities of repeating the practice, which entitle me to confirm the recommendation from my own experience. But the concurring teſtimony of thoſe practitioners, who have uſed the Savine ointment to great extent, leaves no doubt of its efficacy; and the principle of its action correſponds ſo completely with the indications

tions which I have pointed out as requiſite to be fulfilled, that I have no heſitation in adopting the practice. Though, as I lay no ſtreſs upon the ſpecific virtues of the Savine, I ſhould entertain an equally favourable opinion of any other ſtimulating remedy which anſwers the purpoſe of ſupporting a conſtant and copious diſcharge of matter.

With regard to the prognoſis, in caſes of white ſwelling which have continued a long time, have advanced far in their progreſs, have reſiſted the moſt approved method of treatment, and are accompanied with febrile acceſſions, it would be unreaſonable to encourage ſanguine expectations of obtaining a cure. For the event, in this advanced ſtage of the complaint, is at beſt doubtful, and, in general, very unfavourable. Yet ſuch caſes are not to be neglected as deſperate on that account, nor are we entitled to indulge any remiſſneſs in the aſſiduity of our care, or in the activity of our practice.

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On the contrary, the aggravation of ſymptoms renders it neceſſary to extend our attention to the ſtate of the patient's general health, as well as to the local circumſtances of the complaint. With this view, we have to conſider what regimen of diet and courſe of internal medicines it is proper to preſcribe.

The firſt queſtion which occurs reſpects the ſafety and expediency of giving anodynes, which the violence of the pain ſo obviouſly indicates, but which the tendency to perſpiration may ſeem to forbid; for opium undoubtedly contributes to increaſe this diſpoſition. In compromiſing between theſe two contradictory indications, we may obſerve, that the conſtancy and ſeverity of the pain has more effect to haraſs the patient's conſtitution, and to wear out his ſtrength, than any increaſe of perſpiration which is likely to ariſe from the moderate uſe of opium. Or, ſuppoſing that the caſe will ultimately go wrong, the increaſe of perſpiration will not much accelerate the patient's fate, while the anodyne effects of the

opium will keep him eaſy during the remainder of his ſufferings; and the feelings of a patient well deſerve to be conſulted under ſuch diſtreſſing circumſtances. Upon the whole, therefore, there can be little doubt of the propriety of giving opium for the purpoſe of allaying pain. It may likewiſe be requiſite in order to check the violence of the diarrhoea, which ſo frequently ſupervenes at this period of the diſeaſe; for opiates, conjoined with aſtringents, or given in the form of anodyne injections, are the remedies to which we are to look for the cure or palliation of this troubleſome and enfeebling ſymptom.

Peruvian bark is another medicine whoſe exhibition is ſomewhat doubtful from the precarioufneſs of its effects, as it often proves too heavy for the weak powers of digeſtion, irritates the bowels, and paſſes off by ſtool undigeſted. If, however, the patient's ſtomach can bear it without inconvenience, it is one of the beſt and ſafeſt medicines which can be employed in this ſtage of the complaint.

But

But there is no clafs of medicines more grateful or more ufeful than the different kinds of acids. The vegetable acids of freſh fruit are the moſt palatable and refreſhing, though, as they are more liable to attack the bowels with looſeneſs, than the mineral acids, they cannot be given with much aſſurance of ſafety. Upon this account, the vitriolic acid is the one moſt frequently employed. It is both cooling and ſtrengthening, and may therefore be allowed to any extent which the patient's thirſt requires; for, when ſufficiently diluted with water, there is no medicine more ſafe.

The diet of patients in the advanced ſtate of white ſwelling, who are ſuffering perpetual irritation from fever and pain, and gradually loſing their fleſh and their ſtrength from frequent perſpiration, requires to be nouriſhing without being ſtimulating. A very low diet would not afford ſufficient nouriſhment, while one too nutritious would exaſperate the ſymptoms

of

of fever. So that an intermediate diet, compoſed chiefly of milk and farinaceous vegetables, in general anſwers beſt. Solid animal food is too rich; beſides, in this form, the patients appetite ſeldom inclines them to take it. But though animal food, in a ſolid form, be not ſo proper, there is rarely any objection to the uſe of the gelatinous parts of animals diſſolved in water, in the form of jelly. In all theſe caſes, however, particular attention muſt be paid to the ſtate of the patient's ſtrength, and to the effect which the different articles of food have upon his complaints. But though the judicious ſelection of internal medicines, and the proper regulation of diet, be matters of great importance in the management of the caſe, yet we ſhould always remember that they do not ſtrike directly at the root of the evil, and that, as the complaint is originally local, the cure muſt ultimately depend upon the effect of topical applications to the knee itſelf. I, therefore, think it unneceſſary to give a more minute explanation

planation of thoſe points of practice, and have contented myſelf with mentioning the principal remedies. I have ſaid nothing of Cicuta, Barytes muriata, and ſome other medicines which are ſuppoſed to be uſeful in caſes of ſcrofula, becauſe, whatever benefit may be derived from them in ſlighter ſcrofulous affections, a ſerious attack of white ſwelling of the knee lies far beyond the reach of their powers. If fortunately however the treatment of the caſe prove ſucceſsful, by procuring a decreaſe of the ſwelling, a diminution of the pain, and an abatement of all the ſymptoms of diſtreſs, there is then reaſon to flatter ourſelves with the proſpect of obtaining a complete cure. But, to ſecure all the advantages, which have been previouſly gained, we muſt beſtow the ſame attention on every circumſtance of management during the decline of the diſeaſe, as we beſtowed during the approach of the attack. The patient, therefore, ſhould moſt ſcrupulouſly avoid expoſing himſelf to any kind of irritation or injury. and occaſionally rub the knee with ſome of thoſe ſtimulating embrocations which were recommended

commended in the more early ſtages. In the progreſs of convaleſcence, too, when the parts are ſtill in a ſtate of relaxation and weakneſs, and require additional ſupport, it is adviſable to wear a knee-cap made of ſtrong cotton cloth, and ſo accurately fitted, that it may preſs equally on every part. A bandage of this conſtruction may be requiſite for many months after the violence of the diſeaſe is ſubdued. It produces little inconvenience; and has no greater effect in reſtraining the motions of the joint than what is deſirable in order to prevent accidents.

The application of a ſtrengthening plaſter ſpread upon leather is employed with much the ſame view. The preſſure, indeed, is neither ſo equable nor ſo powerful, nor can the degree of it be varied at pleaſure, but theſe diſadvantages are in ſome meaſure compenſated by the medicinal effects of the plaſter; for, if any veſtige of uneaſineſs remain, ſome ſlight and continued

nued irritation on the ſurface proves uſeful. Or, if one ſet of precautions do not ſeem ſufficient, the two applications may, in ſome meaſure, be conjoined, by lacing a knee-cap over a plaſter, and thus the patient will enjoy the benefit of both at once. By theſe cautious meaſures, a complete recovery may be obtained; and I cannot too much enforce the neceſſity of perſevering with the moſt unremitting ſteadineſs in every precaution which promotes the completeneſs of the cure, and diminiſhes the riſk of a relapſe.

The plan of treatment which I have now explained, is applicable to thoſe caſes of white ſwelling which have the ordinary mode of commencement. But, in thoſe caſes which begin after a different manner, the practice requires to be varied during the incipient ſtages of the attack. In a former part of theſe obſervations, I have deſcribed a certain claſs of caſes, as beginning in the form of a ſoft ſwelling which lies over the

the region of the knee joint, and ariſes from the collection of a fluid under the ſkin. The contents of theſe ſwellings are a kind of purulent matter formed by an unhealthy ſpecies of inflammation. They are ſeldom, at leaſt in the beginning, attended with much pain, nor do they occaſion much diſtreſs till they produce that preternatural ſenſibility which is the conſequence of morbid irritation. From the nature of the attack it is plain, that there is no indication to juſtify the local detraction of blood. But whether ſuch ſwellings ſhould be immediately opened, in order to evacuate the fluid, is a point not ſo unanimouſly agreed upon, and perhaps the effects of opening them are not ſo uniform as to warrant the adoption of any abſolute unexceptionable rule; though I believe, that, in general, the better practice is not to open them immediately, becauſe, if there be any incipient inflammation, the circumſtances which neceſſarily attend the inciſion, along with the free acceſs of air, is almoſt certain to excite

excite conſiderable irritation, in conſequence of which, the inſide of the cavity ſoon becomes covered with a diſcoloured ſlough, and diſcharges matter of a thin conſiſtence and offenſive ſmell. The local ſymptoms, too, are ſoon followed by the acceſſion of ſymptomatic fever, in which the pulſe is quick and feeble, ſo that there ſeems to be a tendency to that type which has been termed putrid. Under theſe circumſtances, the ſtate of the patient is exceedingly uncomfortable, and not always free from danger. But by delaying the opening for ſome time, and, during the interval, by employing other means of relief, the violence of the ſymptomatic attack, if it be not entirely avoided, is at leaſt very much diminiſhed. If the appearances encourage hopes that the fluid will be removed by abſorption, the application of diſcutient ſolution may tend to promote this end; though I am inclined to believe that the application of a large bliſter is the more certain and efficacious practice. And al-

though the action of the bliſter ſhould not effect the abſorption, yet it rarely fails to give a determination to the ſurface, ſo that the collection of matter more readily finds an opening externally, and the inflammation is often transferred from the deeper ſeated parts to the more ſuperficial. In this way, although the collection ſhould not be removed, yet the riſk of inducing a deep ſeated permanent affection is greatly diminiſhed. And if the ſwelling do not open ſpontaneouſly, an artificial opening may be made with more ſafety. In this caſe, however, the evacuation of the matter does not always complete the cure, as the internal ſurface of the cavity has in general loſt all diſpoſition to unite by adheſion before the matter be evacuated. When this happens, the complaint is frequently converted into a running ſore, attended with conſiderable irritation, and ſome degree of hectic fever. In this ſtate, it will frequently remain ſtationary for a long time, without ſhowing any tendency to undergo a favourable

vourable change, ſo that it requires great management to obliterate the cavity. The obliteration may be attempted in two ways, either by the employment of means which reſtore and invigorate the patient's health, or by the appropriated treatment of the local ſore. The firſt, if it anſwer the end in view, is by much the ſafeſt; and for this purpoſe, I have found no remedy better than ſea bathing. I have known patients under very great debility begin to recover their ſtrength after a few immerſions. After this, the ſore gradually diminiſhed in ſize, till, in a ſhort time, it was completely healed up. Under ſuch circumſtances, therefore, I ſhould recommend ſea bathing whenever the convenience of the patient's ſituation admits of it. But if either there be no conveniency to bathe, or if the bathing be not found to anſwer the purpoſe, we muſt rely entirely upon the effects of local treatment. The difficulty here is to deviſe any method of cure which will not tend too much to irritate parts in a morbid

morbid ſtate. Stimulating injections have this diſadvantage, beſides, they are very uncertain in their effect. Neither is the mechanical preſſure of bandages more effectual; and it is likewiſe apt to fret the ſkin, ſo that the only other alternatives left in our choice are the longitudinal diviſion of the ſkin, or the inſertion of a ſeton. And although, in ordinary caſes, I ſhould eſteem the former practice to be the more eligible, yet, in this form of white ſwelling, I am rather inclined to prefer the introduction of a ſeton; becauſe, when the ſtrength and conſtitution of a patient are impaired by diſeaſe, the very extenſive wound, which the complete longitudinal diviſion of the ſkin makes, is apt to degenerate into an unhealthy ſore, which we cannot promiſe to heal up ſoon. But a ſeton, by preſerving the ſkin entire, is not expoſed to this inconvenience; it is, indeed, almoſt certain to excite conſiderable irritation at the time of its inſertion; and the parts, being under a morbid ſtate of action, an attack

tack of hectic fever frequently ſupervenes. But if the patient eſcape the immediate conſequences of the irritation, the ſubſequent imflammation ſeldom fails to diminiſh the extent of the cavity, and ſometimes even ſerves to effectuate a complete cure. One cannot, however, be confident of procuring this favourable termination, ſo that it is imprudent to recur either to the longitudinal diviſion of the ſkin, or the inſertion of a ſeton, till every other means of relief have been tried without ſucceſs, and till, by their failure, we are ſatisfied that there is no chance of obtaining a cure by a different line of practice. This kind of attack is always ſerious, and often goes wrong, though, upon the whole, the termination is, in general, ſo fortunate as to juſtify a favourable, though guarded, prognoſis.

An attack of white ſwelling ſometimes approaches under the appearance of an enlargement in the cellular ſubſtance, at the lower part of the thigh, immediately above the

the knee. This appearance, indeed, rather indicates a tendency towards diſeaſe than the actual formation of a regular attack, and I have ſeldom found it followed by bad conſequences. However, it deſerves great attention on the part of the practitioner, as it betrays ſymptoms of an unſound conſtitution. On this account, the patient ſhould be guarded in his mode of living, and be aſſiduous in employing thoſe meaſures of precaution which prevent the aggravation of the ſymptoms. Of theſe the moſt eſſential ſeem to me to be the conſtant uſe of preſſure, along with the cold aſtringent ſolutions; for it is rarely neceſſary to recur to the application of a bliſter, or the more ſevere remedies.

That form of attack which is characterized by a relaxation of the ligaments, and a preternatural flexibility of the joint, is not a favourable ſubject of practice. It does not, indeed, ſeem to be of a dangerous nature, though it cannot be cured by the uſe of

of any remedies with which I am acquainted; for all the caſes which have come within my obſervation have remained ſtationary, notwithſtanding applications, conceived to be the moſt tonic, were kept conſtantly applied. I believe it to be a caſe of rare occurrence, as I have met with very few inſtances of it.

All the caſes of that ſingular variety firſt mentioned by M. Cheſelden; in which excruciating deep ſeated circumſcribed pain conſtitute the eſſential ſymptom of the diſeaſe, which have fallen within my notice, have terminated in a favourable manner. Some have yielded to reſt in a horizontal poſture, or to reſt conjoined with the uſe of cold ſaturnine ſolutions, and the application of leeches. Very few have required the application of bliſters, and only one caſe threatened to be followed with dangerous conſequences. But the hiſtory of this caſe was ſo curious and intereſting towards its concluſion, that I ſhall mention the principal

cipal circumſtances. The pain which had long been excruciating, and perpetually upon the increaſe, became at laſt ſo intolerable, that the patient could no longer endure the torment of his ſufferings, and was anxious to part with his limb. Yet all this while there was no external mark of diſeaſe, excepting an inconſiderable fullneſs on the two ſides of the ligament of the patella, which it required very accurate examination to perceive. Every reſource of practice had been exhauſted to no purpoſe; but, before recurring to amputation, it was reſolved to make an inciſion through the capſular ligament into the cavity of the joint, though without any definite object. The inciſion was accordingly made. From that moment, the patient began to recover, and came at laſt to enjoy all the benefit of a perfect cure. Every one who witneſſed the operation was ſurpriſed at its ſucceſs, which was as unexpected as the principle of the practice was unaccountable. And although I have revolved this caſe frequent-

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ly in my mind, I ſtill confeſs my inability to explain in what manner the effects of the inciſion proved ſo highly beneficial. This unparalleled ſucceſs, however, was a matter of infinite joy to the patient, though it led to no ſolid improvement in practice; for the moſt enthuſiaſtic admirers of the experiment could not recommend it for imitation, excepting under circumſtances where there was no appearance of any morbid affection in the capſular ligament. But this condition is ſo little compatible with the ordinary caſes of white ſwelling as to afford few opportunities to repeat the practice with any proſpect of advantage. I know, indeed, there are ſome practitioners who, under the erroneous notion of the ſwelling being produced by a collection of matter, entertain a more favourable opinion of making an inciſion into the cavity of the knee joint in caſes of white ſwelling, though I very much queſtion whether this opinion be a juſt one and founded upon accurate and extenſive obſervation of facts; for, as the capſular ligament,

and all the parts anterior to it, are in a very morbid ſtate, they cannot be cut into without exciting high irritation, and exaſperating the ſeverity of the diſeaſe. This, accordingly, has been the uniform reſult of every attempt to carry this practice into execution which has come to my knowledge, excepting the ſolitary example of ſucceſs above related, and which, indeed, ſcarcely forms an exception to the general rule, as the capſular ligament was not morbidly affected. I therefore regard it as a moſt injudicious and dangerous practice in the more early ſtages of the attack, while any proſpect of a cure remains, as the caſes all go rapidly wrong from the moment of the inciſion, which thus deprives the patient of every chance of recovery. Towards the concluſion of the complaint, indeed, when the caſe is otherwiſe deſperate, and amputation reſolved upon, an inciſion into the joint can do little harm; though I certainly eſteem it to be an uſeleſs operation, which ſubjects the patient to unneceſſary pain, and

and which ſhould be attempted only upon the expreſs proviſion of performing amputation whenever any aggravation of ſymptoms appear. It is therefore but candid to appriſe the patient of his actual ſituation before we adopt any meaſure of ſo ſerious a nature.

In reviewing the whole doctrine of white ſwelling, whether it reſpects the hiſtory of the ſymptoms, or the cure of the attack, one muſt be ſtruck with the variety of appearances which preſent themſelves, and with the number of remedies which are recommended; the latter is, indeed, in ſome meaſure, the conſequence of the former; for, were any remedy known which was more univerſally efficacious, the catalogue would not be ſo numerous. But, as we are unacquainted with any ſpecific, we muſt accommodate our practice to the circumſtances of the caſe. And I have endeavoured to explain the principles upon which the cure ought to be conducted in the

the various forms and ſtages of the complaint. Theſe I ſhall not recapitulate now; though, conſidering the inſidious nature of the diſeaſe, I ſhould rather be inclined to err on the ſide of activity; and if the attack appeared to be ſevere, or the progreſs rapid, to paſs over the ſucceſſion of remedies which I have mentioned as adapted to the progreſſive ſtages of the diſeaſe, and to recur immediately to the moſt powerful.

But if, notwithſtanding the utmoſt care and attention, the diſeaſe ſhould unfortunately take an unfavourable turn, it then becomes a queſtion how far it is prudent to adviſe the removal of the patient's limb, in hopes of preſerving his life. I know, indeed, that ſome practitioners entertain doubts reſpecting the propriety of the practice, from an apprehenſion that the removal of one diſeaſed part invites an attack upon another. In my opinion, however, theſe apprehenſions are entirely groundleſs, and neither

neither conſonant to principle nor to fact. But, without entering into any controverſy upon the ſubject, I ſhall content myſelf with obſerving, that the practice of performing amputation in caſes of incurable white ſwelling, is now generally eſtabliſhed, and found to be attended with the happieſt effects. So that the propriety of the practice is fully confirmed by experience.

The only other point which requires to be conſidered reſpects the choice of the proper time to amputate the limb. This indeed is always a matter of importance, which often requires great diſcernment and deciſion of judgment to determine judiciouſly. For, if the diſeaſe be of that nature which allows us to entertain hopes of recovery to a very late period, although the patient's ſtrength all the while be gradually declining, we may, from too great confidence in our hopes, let the favourable moment eſcape, and delay operating till it be too late. This is a dilemma which often

ten occurs in practice, where, by operating prematurely, the patient loſes his limb without neceſſity, or by delaying too long loſes his life, and thus he is equally expoſed to ſuffer, either by the improper precipitancy or procraſtination of the ſurgeon. I do not however think this difficulty likely to prove embarraſſing in caſes of white ſwelling, becauſe, there we always foreſee the approach of the fatal event long before it actually arrives; ſo that there is always a conſiderable interval of time during which amputation may be performed with propriety and advantage. For it is certainly juſtifiable to adviſe amputation whenever we are ſatisfied that the caſe is incurable. And it is almoſt incredible from how great a degree of lowneſs a patient will recover after the diſeaſed parts have been removed. I have often ſeen ſuch recoveries with aſtoniſhment. For although the patient was completely emaciated and his ſtrength greatly impaired, yet I have known only one, or at moſt two inſtances of ſinking from

from the moment of the operation. I do not however eſteem it prudent to delay operating till ſo late a period. On the contrary, the moſt eligible time to propoſe the operation ſeems to me to be immediately after the caſe has been declared deſperate. For, by this time, we may be aſſured, that the patient's ſtrength will be ſufficiently reduced to obviate any riſk of his ſuffering from too violent an attack of ſymptomatic inflammation, while he is better able to bear the fatigue of the operation and of the recovery from it, and the duration of his diſtreſs is abridged. Beſides, the cure is likely to be more ſpeedy and more perfect, as there is a better chance of general adheſions taking place, and leſs riſk of ſinuſes forming in the cellular membrane.

But, while I recommend this as the moſt eligible time to amputate, I wiſh it to be underſtood, that as the patient has nearly an equal proſpect of recovering at a late period, the practitioner ſhould be fully convinced

vinced of the impoſſibility of curing the complaint in an eaſier manner.

With regard to the beſt mode of operating, I decidedly prefer that which propoſes to accompliſh a cure by procuring a coaleſcence of the lips of the wound by adheſion. For this method of cure is attended with many advantages. It is the moſt expeditious, produces the leaſt ſuppuration, and, what is of ſtill greater conſequence, relieves the patient from the danger of a bad ſcrofulous ulcer ſupervening upon the ſurface of the ſtump. But, when a large open ſore is firſt produced, this inconvenience frequently enſues; and then, if the patient's conſtitution be much tainted, and his ſtrength greatly impaired, the ſore often degenerates into a bad ulcer, which not only is tedious and difficult to heal, but likewiſe apt to ſpread and form dangerous eroſions among the neighbouring parts. In this way, I have known progreſſive ulcerations erode blood-veſſels of conſiderable

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ſize, and which, as they lay deep among diſeaſed and inacceſſible parts, could not be diſcovered and ſecured; there was no poſſibility of applying ſtyptics, or of employing preſſure with efficacy, and for a ſufficient length of time to ſtop the haemorrhage. So the haemorrhage continued till the patient was gradually worn out, and ſunk at laſt from loſs of blood. To avoid theſe inconveniencies, therefore, it is of the utmoſt importance to profit by the ſlight and tranſient inflammation, which takes place in weakly and diſeaſed conſtitutions, and to endeavour to heal the ſtump, while the inflammation continues in a healthy ſtate. There is no great riſk of producing dangerous effuſions upon any important organ, by employing this expeditious method of healing the ſtump without any conſiderable diſcharge by ſuppuration. I will not indeed go to the length of ſaying, that fears of this kind are altogether imaginary. Although I may obſerve, that in the whole courſe of my practice, I have met with only a

ſingle fact which gives the ſmalleſt countenance to the opinion. It occurred in a patient about the middle age of life, who had his leg amputated above the knee, on account of an incurable white ſwelling. The wound healed uncommonly kindly, and with unuſual diſpatch, ſo that the cure was completed in leſs than three weeks. But during the time of his recovery, he began to complain of pain in his head, which pain increaſed gradually in ſeverity, and came to be accompanied with every ſymptom of hydrocephalus. At laſt, he died between five and ſix weeks from the date of the operation; and upon inſpecting his head after death, a collection of water was found in the ventricles of the brain. What dependance this collection had upon the ſpeedy healing of the wound, I ſhall not pretend to ſay, though if it were very intimate, one ſhould expect ſuch accidents to be more frequently met with in practice. Certainly no general and very poſitive inference can be made from a ſolitary, and in ſome meaſure

meaſure an equivocal caſe. At leaſt the occurrence is ſo very rare, that the riſk of its diſturbing the ſucceſs of a cure never can counterbalance the great and almoſt unavoidable miſchiefs which ſo often attend the other modes of amputation. For, upon the whole, the patients ſurvive the operation, recover the plumpneſs of their fleſh, regain their ſtrength, and have their health fully re-eſtabliſhed in every reſpect.

CHAP.

CHAP. XI.

CURE OF SIMPLE INFLAMMATION.

IN caſes which are purely inflammatory, the practice is the moſt obvious and the moſt ſimple. They are in general the conſequence of external violence. But, after the complaint has taken place, the cauſe of its origin is of leſs conſequence, provided it be not connected with ſome general diſeaſe of the conſtitution. And when there is no ſuſpicion of any ſuch combination, the line of the practice comes to

to be entirely regulated by the violence of the local ſymptoms. From the nature of the attack, there can be no doubt concerning the propriety of adviſing the topical detraction of blood. This meaſure therefore ought always to be reſorted to in the firſt place. And if the ſymptoms be ſo moderate as to be relieved by the firſt bleeding, there will be no occaſion to repeat it. The cure may afterwards be compleated by the uſe of cold aſtringent applications. It is, however, only in caſes where the attack of inflammation is ſlight, that we can expect to obtain a cure ſo eaſily and ſo ſpeedily. For in caſes of greater ſeverity, not only a repetition of the topical blood-letting is neceſſary, but it is even requiſite to preſcribe a general blood-letting, and it is doubtful how far the uſe of cold applications is judicious and ſafe at the beginning of ſuch an attack. Becauſe, when the attack is ſevere, it cannot be removed at once by any means of cure; and the ſolutions of the metallic ſalts, which are moſt commonly employed on thoſe occaſions,

occaſions, in place of procuring a mitigation of the ſymptoms, often ſerve to excite or increaſe irritation. In thoſe caſes, therefore, the violence of the inflammation ſhould be allowed to diminiſh before cold and aſtringent applications can be uſed with certainty of advantage. The repetition of topical blood-letting is the moſt efficacious mean of procuring an abatement of the inflammation. During the interval between the bleedings, the application of warm fomentations is the moſt ſafe and ſalutary line of practice. And as it is of conſequence to procure a profuſe evacuation of blood from the affected parts, the number of leeches employed ought to be conſiderable, from twelve to eighteen or twenty. The application of the leeches ſhould be repeated in the courſe of twenty-four hours, if the patient do not by that time experience ſenſible relief. The propriety of applying them more frequently will depend upon the progreſs of the attack. For, once it becomes apparent, that a cure by reſolution

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is not to be obtained, it would not only be unneceſſary, but poſſibly prejudicial to perſiſt farther in the practice of evacuation.

In uſing the fomentations, great care ought to be taken to wring the flannels which are wrapped round the knee ſo dry, that nothing but the ſteam of the fomentation comes into contact with the ſurface of the tender parts. In this ſtate, the flannels, after being taken out of the boiling decoction, are applied as warm as the patient can bear them. It is uſual to continue the fomentation about a quarter of an hour at a time, and to repeat it three or four times a day. A decoction of poppy heads, or of the leaves of the marſh mallow, or of chamomile flowers, anſwer exceedingly well as materials for the fomentation. Between the times of fomentation, it is ſufficient to wrap the knee in a covering of ſoft flannel. This practice ought to be perſevered in until ſome change take place in the ſtate of the complaint, either by an abatement of the

the inflammation, or by advancement towards ſuppuration.

In the commencement of an attack of acute inflammation, I have confined myſelf to the recommendation of very ſimple practice, and few remedies, becauſe, in reality, they are the only ones on whoſe efficacy we can juſtly repoſe confidence.

With regard to the propriety of bliſtering in caſes of ſimple acute inflammation, I do not conceive it to be ſo ſerviceable as the detraction of blood. And as the application of a bliſter interferes with the repetition of the bleeding, it does not ſo properly find a place under theſe circumſtances. But if ever the inflammatory attack be accompanied with an effuſion into the cavity of the joint, then the repeated uſe of bliſters is attended with the moſt beneficial effects. In ſuch caſes, therefore, I ſhould confide very much in the practice of bliſtering. Indeed I have known inſtances of large

large ſwellings, produced by effuſion into the cavity of the joint, yield at once to the application of a bliſter, although they had reſiſted other means of relief. One ſwelling was occaſioned by the puncture of a ſharp piece of iron which had penetrated into the cavity of the knee; yet, though this circumſtance was certainly unfavourable, the patient got perfectly well after the application of a ſingle bliſter. It is true, a number of leeches had been previouſly applied to the ſwelling. And as, in all ſuch caſes, a topical bleeding will be the firſt meaſure adopted, there will be little riſk of applying a bliſter prematurely.

The incipient ſtages of an attack of active inflammation is liable to produce ſymptoms of general fever, which aggravate the patient's diſtreſs. But though they may increaſe the patient's uneaſineſs, they rarely attain a height which requires any general detraction of blood; though this is a meaſure which ought always to be kept in

view, ſince, in full and plethoric habits, where there is a conſiderable degree of fever preſent, the copious evacuation of blood from ſome of the larger veſſels contribues to accelerate and augment the effect of a local bleeding. The preciſe ſtate of the complaint which determines the propriety of this practice, muſt be left to the diſcretion of the practitioner. It is, however, always proper to keep the bowels open by the uſe of gently aperient medicines, and to give mild diaphoretics to produce a gentle moiſture on the ſurface of the ſkin; and, as thoſe diaphoretics often contain ſome opium in their compoſition, a double doſe at bed time is commonly all the anodyne which it is requiſite to give.

By this treatment, eſpecially if it be begun early, and acted upon decidedly, the violence of the inflammation in general abates, and a cure is obtained by reſolution. When the ſymptoms are upon the decline, then is the proper time to employ cold and aſtringent

aſtringent applications. They ſerve to remove the tenderneſs and to ſtrengthen the tone of the parts; and after theſe objects are ſo far accompliſhed, the patient is able to bear friction with emollients, which contributes to remove any rigidity which may ſtill remain.

If the cure of a caſe of ſimple inflammation of the knee ſucceed happily, the recovery is complete, and the patient is never after troubled with any veſtige of complaint, nor is he ſubject to a relapſe. But if, inſtead of admitting of a cure by reſolution, the attack proceed to terminate in ſuppuration, then the progreſs of the ſymptoms is conſiderably different. The ſwelling of the knee, if it do not increaſe in ſize, at leaſt continues ſtationary; and, although the acuteneſs of the pain may, in ſome meaſure, abate, yet a great degree of tenderneſs and irritability remains; ſo that the patient feels great uneaſineſs upon the moſt ſlight and ſuperficial touch, more ſenſibly, perhaps, than when the pain was more ſevere, but more deep ſeated. Along with

with theſe changes, the patient likewiſe becomes diſtreſſed with a ſenſation of throbbing in the more deep ſeated parts of the joint. In this combination of ſymptoms, there is every reaſon to ſuſpect that purulent matter is forming, and that, conſequently, the line of practice muſt be adapted to the exiſting ſtate of the caſe. It would be injudicious to perſevere any longer in the detraction of blood, which would tend to weaken the parts without procuring any equivalent advantage. It is likewiſe improper to employ any other evacuation. The great object in this ſtage of the complaint is to promote the proceſs of ſuppuration with as much eaſe to the conſtitution as poſſible; and there is no local remedy anſwers the purpoſe better than the application of an emollient poultice large enough to ſurround the whole of the knee. It ought to be renewed three times a-day, and kept conſtantly applied. In this ſtage, too, opium is a more ſerviceable remedy than in the more early ſtages, as it tends to allay the

the morbid irritability, which proves ſo diſtreſſing to the patient; and, if it do not promote, it certainly does not retard, the formation of matter. The uſe of opium and of emollient cataplaſms are, therefore, the two remedies chiefly to be truſted in this ſtage of the complaint. From the ſtructure of the parts, however, the ſymptoms may keep long ſtationary, as matter collected within the cavity of the knee joint does not ſoon become apparent externally from any local prominence. Its preſence is firſt to be ſuſpected from the preceding ſymptoms, and afterwards, by an obſcure ſenſe of fluctuation, to be perceived upon an accurate examination of the ſwelling. When, however, every circumſtance ſhows, that there is a collection of purulent matter preſent in the joint, the management of the caſe becomes extremely critical and important; for the caſe, at this period, is always attended with a high degree of danger, as the patient is then ſubject to feveriſh paroxiſms, which partake much of the type

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of hectic fever. If the complaint be permitted to follow its natural courſe, it is long before the coverings burſt to give a ſpontaneous diſcharge to the matter. It, therefore, becomes a point of conſequence to determine the expediency of making an inciſion into the cavity of the joint in order to procure an evacuation of the matter. And if we conſider the circumſtances upon which the propriety of this practice depends, we ſhall perceive many advantages to be gained by accelerating the evacuation. In the firſt place, the patient is ſooner relieved from the irritation which the confinement of purulent matter, and the tenſion which it produces, never fail to occaſion. And this relief is of the more conſequence as the continuance of this irritation is the ſource of conſiderable danger. The ſpeedy evacuation of the matter likewiſe diminiſhes the riſk of the bones ſuffering from long immerſion in it. On every account, therefore, the ſurgeon ſhould wiſh to procure an early diſcharge of the purulent matter. Any doubt

doubt which might ariſe from the danger attending wounds into the cavity of the knee joint are here of leſs conſequence, as ſooner or later an opening muſt be made, and there is no riſk of its being premature in caſes of ſuppuration; for the containing parts have loſt much of the diſpoſition to inflame before the preſence of any collection can be diſtinctly diſcovered; ſo that any inciſion made to procure a diſcharge of the matter has a greater tendency to diminiſh irritation, by removing the tenſion, than it has to increaſe the irritation by admitting the acceſs of air, or by any other cauſe. From theſe conſiderations, therefore, an opening ſhould be made into the cavity of the joint, whenever that ſtate of inflammation has gone off which is likely to be aggravated by the infliction of a wound. The place where the opening ought to be made, is, in general, determined by the circumſtances of the caſe, as there is commonly one place more prominent, ſofter, and the integuments apparently thinner, than the reſt. This, for the moſt

moſt part, happens on the inſide of the knee. As to the ſize of the opening, there is no occaſion to make it larger than what is ſufficient to procure a free diſcharge of the matter. If this be done, it is unneceſſary to keep it open by the introduction of a tent, a practice which never fails to excite a conſiderable degree of irritation. After an opening is made, ſuch a poſture ſhould be choſen as will promote the ready diſcharge of the matter. The application of an emollient poultice ought to be continued till the quantity of the diſcharge ſuffer a conſiderable diminution; and then a dreſſing of ſimple cerate may be ſubſtituted in its place. It is always requiſite to attend to the freedom of the diſcharge; though, unleſs the matter be confined, there is little occaſion to enlarge the inciſion, in order to remove tenſion of the ligaments, as this inconvenience ſeldom exiſts *.

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* It is to be remarked, the obſervations in this place refer to caſes of ſuppuration from internal cauſes, and that

An inflammatory attack upon the knee, which comes to ſuppuration, and either opens ſpontaneouſly, or is opened by an inciſion, is always attended with a great degree of danger. If, however, the patient be young, healthy, and otherwiſe in a good habit of body, there is great hope that he will ſurmount the diſtreſs and recover completely. The progreſs of the recovery, indeed, is at firſt very ſlow, as the patient's ſtrength is always very much exhauſted; and, beſides the preſſure of the local diſtreſs, he ſuffers under the effects of a ſevere ſymptomatic fever. The ſeverity of this fever, however, gradually declines, provided there be no permanent affection of the parts compoſing the joint; for, as the diſcharge of matter begins to decreaſe in quantity, and

that they cannot be transferred to caſes of inflammation attended with wounds, and ariſing from violent injuries, in which the enlargement of the wound may be eſſential to relieve the ſtate of tenſion during the ſtate of active inflammation; and, in all caſes, the opening muſt be ſo large as to procure a free diſcharge of the matter.

the pain to abate in violence, every cauſe of weakneſs and of irritation ſoon diminiſhes. And, after theſe obſtacles are removed, I have, in general, found, that a cure was at laſt obtained. In many caſes, the cure is quite complete, the patient regaining the perfect ſtrength and uſe of his limb; though, in caſes leſs fortunate in their termination, there always remains ſome degree of weakneſs and rigidity, and in others, the caſe terminates in the formation of an anchyloſis. But, as this is a termination of much importance, and includes conſiderable variety, I ſhall make it the ſubject of a ſeparate chapter.

CHAP.

CHAP. XII.

CURE OF RHEUMATIC AND GOUTY AFFECTIONS.

RHEUMATIC affections of the knee joint are almoſt conſtantly ſymptomatic of ſome more general attack of rheumatiſm, and therefore vary along with the ſtate of the general affection. Local treatment alone is ſeldom ſufficient to remove the complaint, ſo that recourſe muſt be firſt had to thoſe general and repeated evacuations, bleeding, ſweating,

ſweating, and purging, which the cure of rheumatiſm requires, before we can expect to remove the local affection of the knee. But if, after theſe meaſures have been premiſed, and the violence of the general attack of the knee, in ſome meaſure, ſubdued, the pain and ſwelling ſtill continue conſiderable, then theſe ſymptoms will require particular treatment. Perhaps topical bleeding may be requiſite in certain caſes of great ſeverity, though this practice is not often neceſſary after general blood-letting has been ſufficiently premiſed; for, as rheumatiſm is often attended with effuſion, the application of a bliſter is more adapted to the nature of the complaint. It is even often requiſite to repeat the bliſter frequently before a perfect cure be obtained. But, though the practice of bliſtering may almoſt completely remove the ſwelling, and very much diminiſh the pain, yet it frequently happens, that ſome degree of uneaſineſs and ſtiffneſs ſtill remains. This is often a very tedious and troubleſome conſequence of rheumatiſm,

tiſm, though it commonly goes off gradually under any treatment. In general, however, it is moſt ſucceſsfully ſubdued by the continued uſe of the partial vapour bath, or of warm bathing, and ſubſequent friction, with ſtimulating applications. This termination may be ſaid to be peculiar to rheumatiſm when contraſted with ſimple inflammation, as rheumatiſm never terminates in ſuppuration, nor a ſimple inflammatory attack in that ſpecies of rigidity. Upon the whole, however, it ought to be obſerved, that rheumatiſm is a modification of inflammation; and that, in many inſtances, they differ ſo little from each other, that no diverſity of treatment is requiſite. In ſuch caſes, local bleeding may be a proper meaſure in rheumatic attacks, though the object of theſe obſervations was to point out circumſtances in which ſome difference of practice is requiſite.

It is little neceſſary to ſay much on the treatment of gouty affections of the knee; as in moſt caſes of genuine gout, it

it is not wiſe to be active in the uſe of any local practice. For, in general, the local ſymptoms will depart with the reſolution of the fit. When, indeed, the patient is young, vigorous, and plethoric, and the attack ſhows much of the character of ſimple inflammation, it is ſafe, and often requiſite, to recur to the uſe of topical evacuation; though the propriety of this practice muſt depend upon the degree in which the attack partakes of gout; and when thoſe general principles are kept in view, the judicious application of them, in an individual caſe, muſt reſt entirely with the judgment and diſcretion of the practitioner in attendance.

From the whole of thoſe obſervations, it will appear, that affections of the knee joint, from rheumatiſm or gout, afford leſs field for the practice of ſurgery than caſes of proper inflammation; upon which account, I have treated of both ſymptoms very ſhortly.

CHAP.

CHAP. XIII.

CURE OF DROPSICAL SWELLINGS.

THE treatment of dropſical affections of the knee requires to be varied agreeably to the circumſtances from which the attack originates. For theſe are general or local, or connected with ſome particular ſtate of the conſtitution. The moſt ſimple, though indeed moſt tranſient, conſtitutional affection upon which ſuch ſwellings of the knee depend, ariſes from that ſpecies of

of weakneſs and debility which is occaſioned by the effects of certain enfeebling diſeaſes. Typhus fever, for example. A lingering attack of typhus fever reduces the patient to a great degree of weakneſs; and I have known a dropſical ſwelling of the knee come on during the ſtate of convaleſcence. The ſwelling was not painful, but varied in its ſize at different times of the day. In the morning, after the patient had enjoyed reſt in a horizonal poſture during the night, the ſwelling was greatly diminiſhed; towards evening, after he had endured the fatigue of the day in an erect poſture, it returned again. This alternation in the morning and evening ſize of the ſwelling continued for a conſiderable time; though the difference became gradually leſs as the patient gained ſtrength, and, at laſt, was quite imperceptible. The ſwelling ſeemed to depend entirely upon the general ſtate of the conſtitution; at leaſt no local application which was tried produced the ſmalleſt benefit. Yet

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every remedy was reſorted to, which could be ſuppoſed ſerviceable in ſuch a caſe. The uſe of cold aſtringent ſolutions was varied in many different ways, without being followed with any ſenſible effect. Various ſtimulating applications conjoined with the uſe of friction, anſwered the purpoſe no better. Even bliſters, repeatedly applied, were found equally ineffectual. But while the application of every local remedy failed of fulfilling our expectations, the ſwelling entirely diſappeared, after the patient recovered his ſtrength; ſo that the connection between the general ſtate of the ſyſtem and the affection of the knee was quite manifeſt. For every circumſtance concurred to prove, that the local diſeaſe depended upon a general but temporary debility in the ſyſtem. As this debility was removed by the reſtoration of the patient's ſtrength, the parts about the knee joint likewiſe recovered their tone, ſo that little more than care and attention were requiſite to compleat the cure. It was how-

ever a conſiderable time before the effects of this ſevere attack were entirely got the better of, for after violent exerciſe the patient was long ſenſible of a degree of weakneſs approaching to pain. Moderate exerciſe always proved ſalutary; and by prudent management, the knee recovered completely, and became as ſmall and as ſtrong and as able to bear fatigue as the other. The cure was therefore perfect. It did not indeed appear that the medicinal treatment contributed to promote the cure; though in this, and in all ſimilar caſes, the indications are ſufficiently obvious, as we can only expect to do good by the employment of ſuch means as tend to impart ſtrength and vigour to the conſtitution. To fulfill theſe indications, it is natural to recommend all kind of tonics, cold bathing, and the judicious uſe of exerciſe, along with a nouriſhing diet. But although theſe be the eſſential requiſites in the management of the caſe, I ſhould not entirely diſregard the application of moderate preſſure, and the

the uſe of occaſional friction, with ſome of the milder ſtimulants. By theſe means a cure may be expected, ſo that, in all ſuch caſes, there is good ground to deliver a favourable prognoſis. And I have no reaſon from experience to think, that this kind of ſwelling is liable to return after it has once gone away completely.

This form of dropſical ſwelling, although it be connected with a general ſtate of the ſyſtem, is independent of any ſpecific diſeaſe, and may therefore be more eaſily cured than thoſe which are complicated with ſome obſcure or untractable complaint.

The next form of dropſical ſwelling depends upon venereal contamination, and is thus eſſentially different in its nature, and requires to be treated upon different principles; becauſe inſtead of mere general debility, we find a ſpecific diſeaſe to encounter, which we can hope to counteract and ſubdue only by the uſe of appropriated and ſpecific

ſpecific remedies. For the moſt powerful generic remedies, whether general or local, prove of no avail, unleſs the ſpecific diſeaſe be firſt removed by a complete courſe of mercury. All the caſes of this ſymptomatic dropſy which I have had occaſion to ſee were complicated with ſome ſecondary venereal ſymptom, which, while it marked the nature of the caſe, ſhowed that the diſeaſe was inveterate. But, notwithſtanding theſe circumſtances were ſo far unfavourable, yet every caſe admitted of a cure by the continued uſe of mercury. And after the mercury had made a full impreſſion upon the ſyſtem, the ſwelling began to ſubſide, and continued decreaſing till it was nearly gone. Towards the completion of the cure indeed, I have ſeen the ſwelling remain ſtationary for ſome time; but, at laſt, by perſeverance in the uſe of mercury, together with the application of ſome local remedies, it was completely removed. The local remedies conſiſted of gentle ſtimulants, applied frequently by means of friction, along with the

the uſe of continued moderate preſſure. It may indeed be difficult to ſay how far this additional practice contributed to promote the cure, as the uſe of mercury was likewiſe perſiſted in, till every veſtige of the diſeaſe diſappeared, and might alone have been ſufficient to accompliſh the purpoſe. The employment of the local applications, however, was at leaſt a prudent addition to the practice, which could not poſſibly be attended with any inconvenience. I ſhould therefore eſteem it adviſable to employ them at this ſtage of the complaint, eſpecially when the ſymptoms appear ſtationary, and leave any doubt with regard to the certainty of accompliſhing a cure. But, although the ſwelling ſhould diſappear completely, it is liable to return, unleſs a quantity of mercury has been taken ſufficient to eradicate the venereal contamination. Accordingly this has been the fate of different caſes which have fallen within my notice. It was therefore neceſſary to recur to the

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uſe of mercury, to continue it for a long time, and to puſh it as far as was conſiſtent with ſafety. But, by perſiſting ſteadily for ſome time, after every ſymptom of diſeaſe was gone, the impreſſion of the mercury was rendered effectual, ſo that the patient obtained a compleat and permanent cure.

The only other ſymptomatic dropſy of the knee, which I ſhall notice, as dependent upon a morbid ſtate of the ſyſtem, is connected with a ſcrofulous taint in the conſtitution, and is a complaint of a very ſerious nature. It differs in character from the two former ſpecies of ſymptomatic dropſy, in ſome very eſſential particulars—From the firſt, in the permanency of the cauſe, as a ſcrofulous taint is not a tranſient ſtate of the ſyſtem, which goes off ſpontaneouſly, and carries the conſequential ſymptoms along with it. From the latter, in being an inherent ſtate of the conſtitution, which is not, like a venereal contamination, ſuperinduced in conſequence of ſome

ſome accidental foreign infection. This circumſtance conſtitutes a very material difference in ſeveral reſpects, eſpecially in the various degrees of ſeverity under which it may appear. For ſcrofula, in place of appearing under the form of ſome evident ſymptom, may exiſt merely in a tendency to break out upon the preſence of an occaſional cauſe, and then, when in a moderate degree of violence, may interfere leſs with the effects of local applications. In this reſpect the difference is fortunate, particularly as there is no remedy known which is a ſpecific in ſcrofula. From theſe circumſtances, the radical cure of a ſcrofulous dropſy of the knee proves more difficult than the radical cure of the other two caſes, though the temporary removal of the ſwelling may in general be accomplished more eaſily. Accordingly, I have found by experience, that thoſe caſes of dropſy of the knee, which were produced by a ſcrofulous effuſion, were removed by the application of one or two extenſive

bliſters,

bliſters, eſpecially if the bliſtered ſurface was kept in a ſtate of diſcharge. By this means the ſwelling diſappeared completely, and the diſappearance was effected in a very ſhort time. But, as the taint in the conſtitution was not cured at the ſame time, the ſwelling returned in the courſe of twelve or fifteen months, with many ſymptoms of aggravation, and terminated at laſt in a caſe of incurable white ſwelling.

The recurrence of ſo ſevere a complaint is exceedingly diſtreſſing, and I cannot ſay from experience how far it is poſſible to prevent it by proper management. For the caſes to which I allude were removed from my obſervation from the time of their convaleſcence till after their relapſe. I certainly conſider the riſk of a return to be very conſiderable; though if due care were taken to avoid every cauſe of irritation, and to employ every means which tends to ſtrengthen the tone of the parts, and to invigorate the conſtitution, I ſhould not

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deſpair of accompliſhing a radical cure. What theſe precautions and ſalutary means are has been ſufficiently explained already, ſo that I think it unneceſſary to enumerate them again in this place. It muſt likewiſe be evident that the proſpect of ſucceſs will depend much upon the degree of taint which prevails in the conſtitution; and that if a ſcrofulous taint be conjoined with a venereal infection, in the perſon of the ſame individual, the ſeverity of the caſe will be greatly exaſperated and the chance of recovery greatly diminiſhed.

Having premiſed an account of thoſe caſes of dropſy of the knee which are ſymptomatic of debility, or of ſyphilis, or of ſcrofula, I proceed to conſider thoſe idiopathic caſes which ariſe from an obſcure origin, and cannot be traced to any particular morbid ſtate of the ſyſtem. Caſes of this kind, indeed, I believe, are but of rare occurrence. Some caſes, I know, are arranged under the claſs of idiopathic dropſy, which, in my opinion,

do not properly belong to it. In this number, I reckon thoſe ſwellings which proceed from an accumulation of ſynoria, in conſequence of the preſence and irritation of an extraneous body within the cavity of the joint. For here it is evident, that the dropſy is ſymptomatic of a local irritation, and cannot, with juſtice, be regarded as an idiopathic diſeaſe. It farther appears, that, in thoſe caſes, the fluid of the collection poſſeſſes different properties from the fluid which is collected in ordinary caſes of dropſy. In the latter, it is compoſed almoſt entirely of the ſerous part of the blood; in the former, of the peculiar ſecretion of the joint. And it is of great importance to aſcertain this circumſtance, as it is plain, that, ſhould the ſwelling be occaſioned by the preſence of a foreign body, it is vain to expect its removal while any ſuch permanent cauſe of irritation remains. Suppoſing, however, we are ſatisfied that the dropſy is idiopathic, the proſpect of obtaining a radical cure is ſomewhat precarious, though the means proper to be

be employed for the purpoſe are ſufficiently obvious. There is no room to employ topical blooding, as there is nothing inflammatory in the nature of the attack. The uſe of cold lavations has been found of ſervice when the complaint is recent, and the ſwelling inconſiderable. This, however, is a point of practice which I cannot ſpeak of with confidence from my own experience. Upon the whole, I entertain a more favourable opinion of ſtimulating applications, and have reaſon to believe, that the uſe of electricity has ſometimes been ſalutary. The practice of bliſtering, however, is certainly the moſt efficacious, though even this frequently fails of anſwering the purpoſe in view *.

But,

* I have not thought it neceſſary to be more particular in explaining the mode of employing the different remedies, as this point of practice has been explained in detail in the chapter which treats of the cure of white ſwelling.

But, along with any kind of topical treatment, it is always advantageous to conjoin the uſe of purgative medicines, which have a powerful tendency to promote the abſorption of any effuſed fluid. By theſe means, we may hope to ſucceed in curing the complaint. If, however, all the means employed to procure the abſorption of the fluid ſhould prove abortive, there is ſtill another reſource left in the opening of the joint by an inciſion. This, indeed, muſt be regarded as a ſerious operation, which ought not to be undertaken while any proſpect remains of relieving the complaint by leſs ſevere practice. I ſhould not, therefore, eſteem the continuance of the ſwelling to be alone a ſufficient reaſon for making an inciſion into the cavity of the joint, unleſs it be at the ſame time accompanied with other inconvenient ſymptoms; as the complaint, while it is in this ſtate, will often remain long ſtationary without portending any particular danger, but if it ever becomes painful, from the greatneſs of the diſtenſion, or if the largeneſs of the ſize

ſuſpend

ſuſpend the power of motion, I ſhould not heſitate to recommend an operation. At the ſame time, I have never met with a caſe in which it was neceſſary to carry this practice into execution; ſo that I am inclined to ſuſpect, that thoſe practitioners, who have performed the operation frequently, have adviſed it at a more early ſtage of the complaint than what I ſhould have thought prudent. The manner of performing the operation is ſo ſimple, and ſo ſimilar to that for the exciſion of moveable bodies from the cavity of the joint, that it ſeems ſuperfluous to repeat the directions. It is equally neceſſary to employ every precaution which tends to prevent irritation. Every kind of dreſſing, which has a chance to excite inflammation, ought to be avoided with the utmoſt care; for an attack of inflammation, in theſe circumſtances, has always been found to be attended with the moſt dangerous conſequences. This practical maxim is moſt admirably illuſtrated by ſome obſervations of Mr George Haffner, who has written a treatiſe

treatiſe expreſsly on the ſubject. In the firſt caſes which came under his management, he employed tents to keep the wound open, and to promote a diſcharge. But under this treatment he loſt two patients. In the third caſe, the tent accidentally fell out, ſo that the wound healed by the firſt intention, and the patient recovered. Profiting by the ſucceſs of this accident, he treated the next caſe in a more ſimple manner, and was, accordingly, more ſucceſsful in his practice; though it is rather aſtoniſhing that any hint was requiſite to point out the only rational method of treating the wound. Perhaps, indeed, Mr Haffner conceived, that the mere evacuation of the fluid was not ſufficient to prevent a relapſe, though the introduction of a tent was ſurely a very unſafe way of attempting to change the mode of action in the ſecreting ſurface. It would undoubtedly have been ſafer, and poſſibly equally effectual, to have employed preſſure and ſtrengthening applications, with a view of reſtoring the tone of the parts. I ſhould, therefore,

therefore, recommend applications of this kind, after the dropſical ſwelling has been removed by the evacuation of the fluid, as they certainly afford the moſt probable chance of effecting a complete cure.

I cannot conclude theſe obſervations on the treatment of dropſy of the knee joint without remarking, that all the authors who have hitherto written upon the ſubject have neglected to diſtinguiſh the ſeveral varieties of the complaint with ſufficient care, and thus have recommended one method of cure indiſcriminately to caſes which were not of the ſame nature. This want of proper diſcrimination is a defect which obviouſly leads to confuſion in practice, and makes the obſervations of any individual much leſs valuable to the public. My own experience in this diſeaſe, indeed, has not been ſufficiently extenſive to enable me to arrange the different caſes with all the accuracy and preciſion which I would wiſh, or which the importance

importance of the ſubject deſerves. But although the execution of the deſign may be imperfect, yet the attempt will, at leaſt, be attended with the advantage of laying the foundation of an arrangement which others may extend and improve according to their opportunities. It will, beſides, rouze the attention of the practitioner to inveſtigate the nature of the caſe under his management with greater accuracy, before he adopt any particular line of cure, ſo that his practice is likely to be more judicious and ſucceſsful.

CHAP.

CHAP. XIV.

CONCERNING

THE

BURSAE MUCOSAE.

THE ſtructure of the Burſae Mucoſae, the functions which they perform, and the diſeaſes to which they are liable reſemble the ſtructure, the functions, and the diſeaſes of the internal cavities of joints. It is therefore common to find the Burſae comprehended in the ſame general attack from which the neighbouring joint ſuffers. Thus, in caſes of gout and of rheumatiſm,

the affections of the Burſae often form a conſiderable part of the ſwelling; though, as in both thoſe caſes the ſwellings of the Burſae make a part of the general diſorder, they neither require to be diſtinguiſhed as a particular ſymptom, nor to be ſubjected to a particular method of cure. The caſe however is different, when the ſwelling of one or more of the ſurrounding burſae makes the ſole or at leaſt the prominent features of the attack. For under thoſe circumſtances, the affection of the burſae does not extend to the joint with which the burſae are connected, and thus it conſtitutes a more circumſcribed complaint. The nature of the complaint indeed is ſubject to numerous varieties depending upon the conſtitution and general ſtate of the patient's health; though independently of any collateral circumſtance, and when there is no poſſibility of tracing the attack to any conſtitutional affection, the burſae often ſwell and attain a large ſize. The general nature of the complaint is the ſame in all the

the caſes, though there are ſome ſpecialities attached to the local ſituation of the attack which require particular explanation. I ſhall therefore make a few obſervations upon the different caſes ſeparately.

The burſa, connected with the ligament which is attached to the head of the tibia, ſeems to me the moſt frequently ſubject to ſuffer, though it does not produce the moſt troubleſome or dangerous attack. For I never have known an inſtance of its extending to the joint of the knee, or of its being attended with fever. It may be troubleſome from its ſize, or incommoding from its pain, but it is not followed with any more diſtreſſing conſequences. If the ſwelling be the effect of violence, and accompanied with inflammation, then it will be proper to apply leeches during the early ſtage of the attack. But in the more common caſes, which ariſe without any known cauſe, and exhibit no ſymptoms of inflammation, the detraction of blood is unneceſſary. I have found

ſuch

ſuch caſes often yield to the continued uſe of a ſolution of Ammonia Muriata, conjoined with preſſure. Or, in caſes where this mode of treatment produced only an abatement of the ſwelling, I have found the total removal of it completed by the application of a bliſter. After the completion of its removal, however, the ſwelling frequently returns, as the parts do not immediately recover their healthy ſtate of action, and it often proves difficult to prevent relapſes of this kind, ſo that the patient is again incommoded with a return of the complaint. The beſt means of prevention are the uſe of moderate preſſure and cold lavations. When theſe fail, and the ſwellings return, the caſe ſeldom admits of a radical cure. For although the ſwelling may be removed by the repetition of bliſters, yet a relapſe is almoſt certain. The patient therefore muſt either ſubmit to the inconvenience, or muſt have the collection evacuated by an opening. If the inconvenience be not great, I ſhould prefer temporiſing

poriſing palliative practice. But, if it be ſuch as to produce a conſiderable degree of lameneſs, I ſhould then think it adviſable to make an inciſion into the tumor. It is an operation which is eaſily performed, and I never have ſeen it followed by dangerous conſequences, or excite an inflammation which extended to the joint. The ſymptomatic inflammation indeed is often ſo moderate as to be inſufficient to produce an obliteration of the cavity by the adheſion of its ſides. In theſe caſes the opening continues to diſcharge for a conſiderable length of time. The diſcharge is often viſcid and diſcoloured, but excepting from uncleanlineſs the patient ſuffers no inconvenience. I have never known any ſtimulating injections employed with a view to dry up the diſcharge, or to procure an obliteration of the cavity. And, I confeſs, I ſhould not eſteem ſuch practice to be prudent, as we cannot ſet limits to the inflammation which we may excite, and therefore may incur the riſk of expoſing the knee joint to be

be affected by the irritation of the ſtimulating remedies. It therefore does not ſeem to me wiſe to employ any practice with a view to accelerate the cure which has a chance to be attended with danger; more eſpecially as I never have met with a caſe which did not in time get well by patience and forbearance. If, however, the inconvenience from uncleanlineſs ſhould be very great, and the patient tired of the continuance of the diſcharge, I ſhould not be averſe to employ ſolutions of alum, and thoſe milder aſtringents, which do not excite inflammation.

Such in general is the origin, progreſs, and termination of the affections of the burſa at the head of the tibia. The affections of the burſae connected with the extenſors of the leg are of a much more ſerious nature.

From

From the greater ſize of theſe burſae, the ſwellings are incomparably larger. And although, as inſulated complaints, they occur more rarely than the caſe above mentioned, yet, if taken as complicated with other affections of the knee joint, their occurrence is much more frequent. They are alſo more frequently conjoined with ſymptoms of a ſcrofulous conſtitution, and, from the concurrence of all theſe circumſtances, they form a claſs of caſes infinitely more difficult to treat.

The preſence of ſuch affections of the burſae is in general ſufficiently eaſily known from their ſituation, from their circumſcription, and from the diſtinct perception of a fluid collection. They differ from a ſuperficial collection under the ſkin, in being of a more diſtinct ſhape, a more tenſe feeling, and apparently deeper ſeated. They differ from a dropſical ſwelling of the cavity of the joint in being ſituated higher up, in the impoſſibility of making the fluid undulate from one ſide of the knee to the other, and from the circumſtance

ſtance of no elevation of the patella enſuing from any mode of preſſure. The diagnoſis therefore is perfectly obvious in moſt caſes.

As to the method of cure, it is upon the whole ſo ſimilar to what is adapted to the other caſe, that, excepting in points where ſome material difference occurs, it will be unneceſſary to amplify the ſubject. There is ſeldom any indication to practice local bleeding, as there ſeldom are any ſymptoms of active inflammation preſent; at leaſt, I have ſeldom ſeen any caſes attended with inflammatory ſyptoms; the practice therefore confines itſelf chiefly to the uſe of thoſe remedies which tend to promote abſorption, or when theſe fail, to the evacuation of the fluid by an opening.

Solutions of acetite of lead, of ammonia muriata, and the application of bliſters, are the applications to which I allude, and

and the manners of uſing them has already been fully explained. They require to be continued for a conſiderable length of time; but, when perſiſted in with ſteadineſs, they often prove efficacious in accompliſhing a cure. This favourable termination however can only be expected when the patient is otherwiſe in a good ſtate of health, for if his conſtitution be tainted with ſcrofula, the caſe then proves exceedingly untractable, and the cure uncertain. But the ſuperven-tion of a ſcrofulous taint does not render the caſe a more proper ſubject for the prac-tice of opening the tumor by inciſion, the point next be conſidered. For unleſs the ſwelling be ſo large as to excite pain from diſtention, or to impede the motion of the joint, there is no ſufficient indication to employ this practice. And I never met with a caſe in which theſe ſymptoms exiſt-ed in ſo great a degree as to juſtify the a-doption of it. In ſome caſes, indeed, in which there were evident and ſtrong marks of a ſcrofulous taint, and in which the tu-

mor was prominent, tenſe, and inflamed, I have known an opening made to evacuate the contents, and to relieve the tenſion. But the ſucceſs of the practice was uniformly unfortunate; as the change of circumſtances excited an attack of fever and inflammation, which rendered the immediate amputation of the limb requiſite.

The opening of the tumor, therefore, was not only uſeleſs but even prejudicial. For it obliged the ſurgeon to operate when the patient was under the irritation of a violent fever, which certainly did not contribute to increaſe the chance of his recovery. Under ſuch circumſtances as I deſcribe, with the ſymptoms aggravated by a ſcrofulous contamination, the practice of opening the ſwelling is certainly not adviſable. It has no chance to cure the complaint; it accelerates the progreſs of the attack, and brings the whole of the knee joint more completely within the ſphere of the diſeaſe. In ſuch extreme caſes, therefore, the objections

tions to the practice of opening the ſwelling are unanſwerable.

There is a practice recommended in caſes of leſs magnitude, with a view to produce an opening of the burſae without any external diviſion of the ſkin. It conſiſts in impreſſing a ſmart blow upon the tumor, in order to rupture the membrane of the burſa, to allow the contents to eſcape into the adjacent cellular membrane, where they will be removed by abſorption, and to excite ſuch a degree of inflammation upon the ſurface of the burſa as will obliterate the cavity, and prevent a return of the complaint. The principles of the practice are ſufficiently obvious, though the execution of it is attended with much difficulty and uncertainty, and, upon the whole, it never can be appliable to affections of the large burſae about the knee. For, in order to enſure ſucceſs, the tumor muſt be tenſe, the ſupport behind muſt afford a firm reſiſtance to the blow, and the ſize ſo ſmall that a moderate degree of force is ſufficient for the purpoſe.

But

But none of theſe circumſtances take place about the thigh, ſo that even the practicability of the meaſure is problematical; and even in a more favourable ſituation, I ſcarcely think the practice adviſable.

The practice of introducing a ſeton may find a place with propriety in ſome caſes, though I much doubt if it is ever applicable to affections of the large burſae above the knee, on account of their ſize and contiguity to the joint; for a ſeton operates by inducing a permanent ſtate of inflammation, and under the circumſtances of the caſe, I ſhould be apprehenſive that the riſk of doing harm was greater than the proſpect of advantage. Upon the whole, therefore, I am perſuaded, that there are but few caſes in which either the practice of opening by an inciſion, or of inſerting a ſeton is applicable to the cure of ſwellings in the burſae of the extenſor muſcles. I ſhould therefore be exceedingly cautious in adviſing or adopting the practice;

tice ; though I ſhould not go the length of ſaying, that no caſes can occur in which it may not be adviſable to evacuate the contents of the ſwelling by an operation ; but theſe caſes are extremely rare ; and whenever the urgency of the ſymptoms is ſo great as to render the practice neceſſary, the patient ought to be apprized of the riſk he incurs of ſubjecting himſelf to the neceſſity of immediately loſing his limb by amputation, and the ſurgeon ought to have loſt all hopes of curing the complaint in an eaſier manner, before he recurs to any practice which may eventually be attended with ſuch diſtreſſing conſequences.

CHAP.

CHAP. XV.

ANCHYLOSIS.

OF THE

KNEE JOINT.

THE formation of a ſtiff joint by Anchyloſis affords an intermediate ſpecies of recovery, which, whilſt it is inferior to the perfection of a cure, is yet far preferable to a fatal termination. For although the patient be forever deprived of all the advantages connected with the power of motion, he is completely relieved from the ſymptoms of pain and uneaſineſs. The limb indeed is in general emaciated, feeble, and diſtorted, and ſo little ſerviceable

able for the purpoſe of walking, that it is often more burdenſome than uſeful.

There ſeems to be three diſtinct proceſſes employed by nature to form Anchyloſis. But theſe proceſſes depend upon principles ſo totally different from each other that they are in many reſpects incompatible.

The moſt ſimple, the moſt complete, and the moſt frequent form of Anchyloſis is, the immediate conſequence of an attack of ſimple inflammation upon the knee joint. It is completed without any morbid deſtruction of ſubſtance; though the preciſe manner in which the Anchyloſis takes place is not perhaps fully underſtood in all its circumſtances. For cartilages have never been found in a ſtate of actual inflammation, nor are they known to be ſuſceptible of this mode of morbid action. It is therefore a matter of uncertainty how far they are capable of coaleſcing upon the ſame principle

principle upon which inflamed ſurfaces in other parts of the body coaleſce. The diſſections on record, which tend to illuſtrate this point of pathology, are few in number, and as far as they go they rather lead to a different concluſion.* In one caſe which afforded a favourable opportunity to examine the progreſs of this proceſs, a number of bony vegetations were found to ariſe from the ſmooth ſurface of the cartilage, and to connect the extremities of the bones together. Theſe vegetations were gradually conſolidated into one maſs, and thus formed a bridge of ſolid bone, covered with ſmooth cartilage. After this manner a permanent union was eſtabliſhed between the extremities of two bones which were originally ſeparate. I poſſeſs a preparation of this kind, which exhibits a view of appearances ſuch as I have deſcribed. The patient

* Pouteau Oeuvres Poſthumes, Vol. II. p. 13.

patient was ſtabbed in the knee joint with a large knife, and was in perfect health at the time of receiving the injury *.

In the ſecond kind of anchyloſis, the progreſs of conſolidation is much ſlower than in the firſt, and is farther diſtinguiſhed by the total deſtruction of the intervening cartilages. For in this mode of forming anchyloſis, the whole ſubſtance of the cartilage is entirely conſumed. The conſumption, indeed, is gradual, and is accompanied with the formation of purulent matter; there is, conſequently, a much higher degree of diſeaſe preſent, and, although the ſymptoms are not ſo acute at any particular period, yet the prolonged duration of the attack makes the caſe infinitely more ſevere upon the patient's conſtitution; for, during a great part of the time, he ſuffers under the diſtreſs of hectic fever. On this account, a patient is always much exhauſted and emaciated by the formation of anchyloſis in this way, ſo that, before there

* See plate ſecond.

is time to complete the proceſs, it often becomes neceſſary to amputate the limb in order to ſave him from ſinking under the waſting effects of the diſeaſe.

From the inſpection of the parts, when there is an opportunity to examine them during the progreſs of the attack, it appears that the ſuppuration begins at the margin of the cartilage, and travels between it and the bone, approaching gradually towards the center; but, before it arrives there, the cartilage is almoſt entirely conſumed, ſo the bone is left uncovered and in a diſeaſed ſtate. If the patient's conſtitution be ſufficiently vigorous to ſupport the ſeverity of the attack, the inflammation and ſuppuration gradually abate, and the denuded ſurfaces of the bones, being left in immediate contact, adhere together and form a complete anchyloſis. But although the union of the whole ſurfaces ſhould be complete, yet the adheſion is not ſo firm as in the former caſe, as the extremities of the bones have

have been previouſly in a ſtate of ſuppuration, and, conſequently, more injured by diſeaſe. Accordingly, in any caſes of this kind which have fallen within my obſervation, the bones were more friable than natural, having never altogether recovered their original health and ſtrength. This ſecond ſpecies of anchyloſis may therefore be regarded as affording a more imperfect cure than the firſt ſpecies; it is evidently more uncertain and tedious.

This ſecond ſpecies of anchyloſis is, in ſome meaſure, the natural conſequence of the deſtruction of the intervening articular cartilages, which permits the contiguous ſurfaces of the denuded bones to coaleſce without any proviſion to preſerve the motion of the joint.

The third ſpecies depends upon quite different principles, and is more the creature of accident; as the connection is formed by the oſſification of the ligament; the

anchyloſis

anchyloſis is not ſo complete as in the other two caſes. It ſeldom attains ſtrength enough to ſupport the limb with firmneſs, though it may occaſion a ſufficient degree of rigidity to render the joint wholly uſeleſs. There is no ſaying what cauſes produce this tendency to oſſification. I have in my poſſeſſion a preparation of the knee joint in which this proceſs of oſſification is beginning in one of the ligaments. The patient had received a wound with a ſcythe, which penetrated into the cavity of the joint. He was at the ſame time ſeized with an attack of typhous fever, and died in the courſe of four weeks from the date of the accident. The knee joint had been in a ſtate of inflammation during his illneſs, and, upon diſſecting it after death, a portion of the ligament was diſcovered to have become oſſified. When this change is ſufficiently extenſive and complete, it forms the third ſpecies of anchyloſis; and, from the nature of this ſpecies, it is manifeſt, that it never can obtain in caſes of white ſwelling, as in all

all ſuch caſes, the ligaments, ſo far from oſſifying, become uniformly ſofter than natural.

Rheumatic affections of long continuance often terminate in rigidity of the knee joint, in conſequence, as it ſhould appear, of ſome change produced in the ſtate of the ligament; though, in thoſe caſes, the ligament does not oſſify, nor does it even ſhow any tendency towards oſſification.

With regard to the prognoſis and treatment of anchyloſis, there is little to be ſaid, as the eſſential character of the diſeaſe implies the exiſtence of a permanent change, which admits of no farther alteration. If any thing, therefore, is to be done in the way of ſurgery, it muſt be done during the formation of the anchyloſis, before the proceſs be completed. Accordingly, it has been propoſed to break the incipient

pient connection of the bones by means of violence; and, in one inſtance, a cure upon this principle is ſaid to have happened by accident. A patient, both of whoſe elbow-joints had become ſtiff in conſequence of anchyloſis, fell with violence upon the ground, and ſtretching out his arms to ſave himſelf, the weight of his body procured a ſeparation of the anchyloſis in one arm, ſo that he immediately regained the uſe of the joint. The fortunate event of this caſe may ſeem to juſtify the idea of uſing force to accompliſh the cure of an incomplete anchyloſis. It certainly proves the poſſibility of the event; though I am far from thinking that it goes the length of proving the prudence and propriety of employing ſo harſh and uncertain an inſtrument of practice; for there are no unequivocal ſymptoms which indicate the commencement and completion of the proceſs of oſſification; and if, under thoſe doubtful circumſtances, the attempt be premature, and made

while

while the inflammation exists in an active state, and the parts are still tender, then the irritation which the violence excites is sure to do harm, to exasperate the inflammation, and to give rise to an attack more violent and more dangerous than the one which had been so nearly subdued. Or if, in order to avoid all those hazards and uncertainties, no attempt is made until the inflammation be entirely gone off, and the anchylosis completely formed, then all endeavours come too late to prove effectual, without using a degree of force which it would be unsafe to employ. Upon these accounts, one cannot venture to recommend the employment of force in the cure of anchylosis, as the unavoidable ignorance of the actual state of the parts totally disqualifies a surgeon from judging at what period of the attack this unscientific remedy could be used with safety and with hopes of success.

I need ſcarcely add, that the uſe of warm fomentations and of inunction with emollient liniments, can avail nothing in procuring the diſſolution of an anchyloſis which has been allowed to conſolidate.

The attainment of the ſecond ſpecies of anchyloſis is always a deſirable object, ſince the intervening cartilages muſt have been completely deſtroyed by a tedious ſuppuration before it can take place. It, therefore, becomes the beſt poſſible cure which the circumſtances of the caſe admits; and, although it were practicable to prevent the coaleſcence of the bones, it would be unwiſe to make the attempt; becauſe, after the bones have become ſo far diſeaſed, we never could expect to reſtore ſuch uniformity and poliſh of ſurface as would admit of regular and ſmooth motion in the joint. Beſides, the patient is fortunate if he ſurvive the ſeverity and duration of the attack which attends this ſpecies of anchyloſis. From the firſt, then, the chief object

of

of attention is to moderate the violence of the ſymptoms; and, although the practice employed ſhould not prove ſufficiently efficacious to prevent the misfortune of a ſtiff joint, it may ſtill be regarded as ſucceſsful if it ſaves the life of the patient without ſubjecting him to the diſtreſs of mutilation. In ſome joints of the body, indeed, this hope ſeems almoſt deſperate. The knee joint, for inſtance, ſcarcely admits of a cure by this ſpecies of anchyloſis. For the ſuppuration muſt be ſo extenſive and ſo long continued before the cartilages can be deſtroyed, and the extremities of the bones united, that the patient's ſtrength is inſufficient to hold out till the proceſs be completed. Accordingly, all adult patients, in whom the cartilages of the knee joint are ſeparating by ſuppuration, either die under the progreſs of the attack, or are obliged to ſubmit to amputation. I have never known an adult ſubject in whom this ſpecies of anchyloſis was completed in the knee joint.

The only inſtances of a cure by this ſpecies of anchyloſis, in caſes of white ſwelling, have occurred in patients at an early period of life, when the diſeaſe is ſubject to different modifications; and in ſome of thoſe inſtances, it ſeems to be connected with an affection of the bones which reſembles ſpina ventoſa.

FOR-

FORMULAE

OF

SOME APPLICATIONS.

The Savine Ointment, according to the receipt of Mr Crowther.

℞. Sabinæ, recentis contuſæ.

Ceræ flavæ, ſingularum libram unam.

Adipis ſuillæ libras quatuor.

Adipe et cera liquefactis incoque ſabinam et cola.

Saturnine

Saturnine Waſh.

R. Ceruſſæ Acetatæ, *(vulgo ſugar of lead)* dracham unam.

Aquæ Puræ uncias ſedecim.

Aceti Diſtillati uncias duas, ſolve.

This Waſh is frequently uſed diluted with water.

Lotio Ammoniæ Muriatae.

(Waſh of Crude Sal Ammoniac.)

R. Ammoniæ Muriatæ ſemunciam.

Aceti.

Spiritus vini rectificati.

Aquæ Puræ Singularum uncias octo miſce.

Lotio

Lotio Aſtringens Compoſita.

℞. Cortices Quercus Drachmas duas.

Aquæ puræ uncias duodecim coque ad colaturæ uncias octo, adde.

Aluminis Rupei drachmam unam, miſce.

Lotio Vitrioli Zinci. (White Vitriol.)

℞. Vitrioli Zinci, (vel Albi) drachmam unam.

Aquæ puræ uncias octo.

Acidi Vitrioli tenuioris guttas triginta, ſolve.

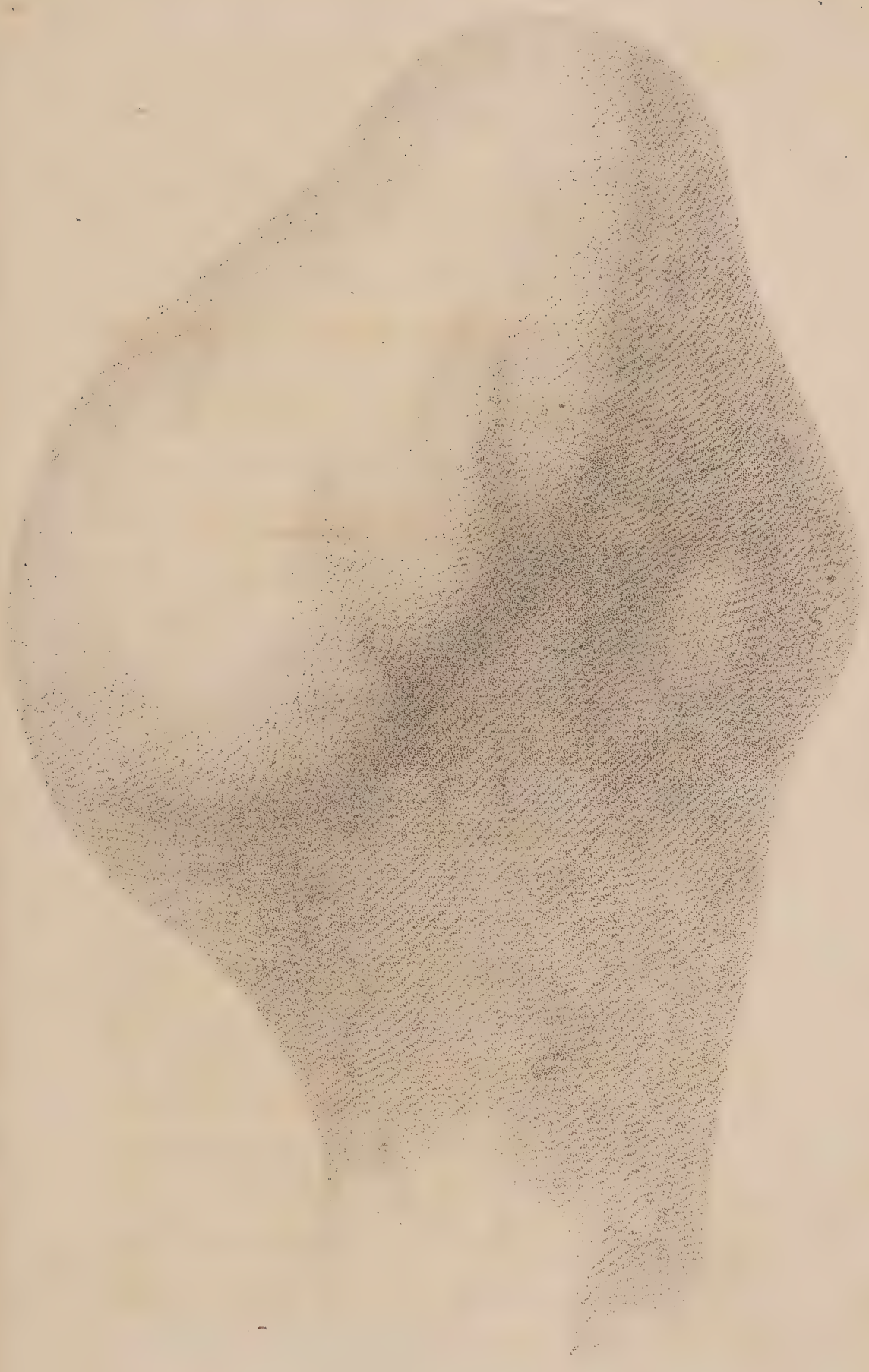
EX-

EXPLANATION OF PLATES.

PLATE I.

THIS plate repreſents the appearance of the diſeaſe mentioned in page 72, in which the circumference of the ſwelling meaſured 28 inches. The inſpection of the figure ſhows the great inequality of ſurface, which is the only circumſtance which admits of repreſentation, and ſerves to characteriſe this ſpecies of ſwelling. Caſes of white ſwelling of a large ſize aſſume a more regular globular form, and from this difference alone could not be miſtaken for the diſeaſe repreſented in the plate.

PLATE I.



D.Lizars Sculp.

I have ſome other drawings of the diſeaſe in my poſſeſſion, in which the ſhape is ſtill more irregular, and the prominences more angular, but the ſwelling not ſo large. It was not however thought neceſſary to give a repreſentation of them, as the ſize of the caſe repreſented is the moſt remarkable, and ſerves ſufficiently to illuſtrate the external appearance of the diſeaſe.

It was likewiſe thought unneceſſary to give any repreſentation of caſes of white ſwelling, as there is nothing very characteriſtical in the external appearance of the diſeaſe, unconnected with the hiſtory of the ſymptoms. Beſides, there is a conſiderable number of leſſer varieties of ſhape in the different forms of attack, ſo that no ſingle figure could afford much inſtruction on the ſubject.

PLATE

PLATE II.

THIS plate repreſents a caſe of Anchyloſis of the bones of the knee, formed in conſequence of an attack of ſimple inflammation. At the place indicated by the letter A, the coaleſcence of the bones was the moſt extenſive and complete. The ſurface is quite ſmooth, and there appears no ſymptom of diſeaſe excepting the diſtortion and conſolidation of the bones.

PLATE III.

IN this plate the principal circumſtances to be obſerved are the very great enlargement of the bones; the extreme thinneſs of the external ſhell, and the completeneſs of their union at the joint B. The patella

A,

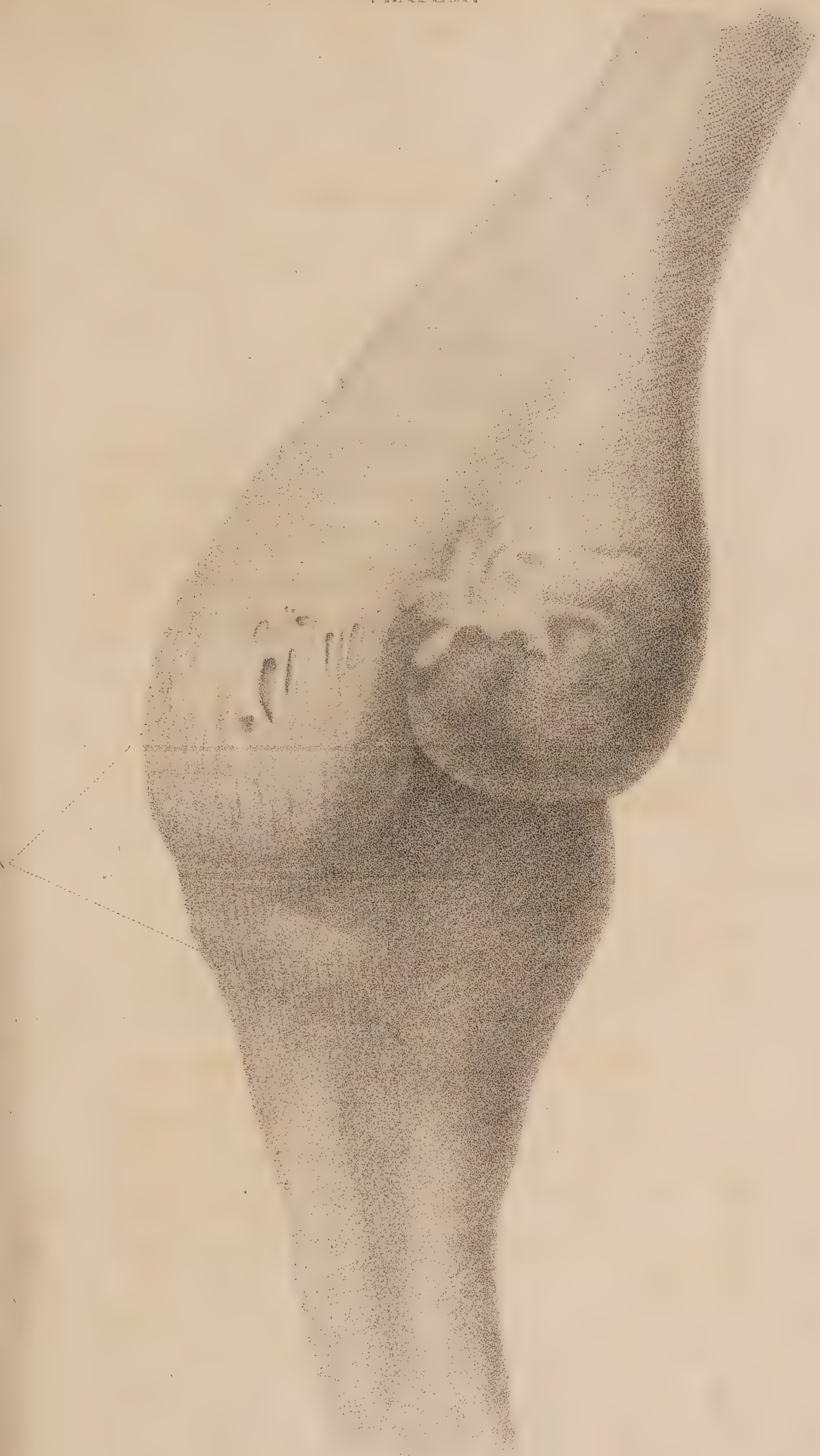


Plate III.

John Stewart sculp.

A, alſo adheres completely to the femur. The patient to whom this bone belonged was between twenty and thirty years of age, at the time of the amputation, and had been lame from her infancy. From the account which was given of the caſe, it was conſidered to have been originally a caſe of white ſwelling, though this circumſtance could not be aſcertained with accuracy on the mere report of the patient. From all the information however which could be obtained upon the ſubject, this was regarded as the moſt probable opinion. Upon this ground I have admitted the poſſibility of an attack of white ſwelling during infancy, terminating in an imperfect cure, by the formation of a ſpecies of anchyloſis. I never met with, nor heard of, any other caſe of true white ſwelling which terminated by anchyloſis.

The preparations which I have to illuſtrate the ſecond ſpecies of anchyloſis, which is preceded by the deſtruction of the inter-

vening cartilages, and completed by the ſubſequent adheſion of the adjacent bones, were taken from a diſeaſe of the tarſus, and therefore could not be repreſented with propriety, in explanation of a diſeaſe of the knee.

A plate of the incipient oſſification of the ligaments would exhibit nothing which could not be equally well underſtood by deſcription.

FINIS.

ERRATA.

Page 5, line 5 from bottom; for *were* read *was*.

Page 104, line 12 from top; for *to* read *on*.

Page 131, line 6 from bottom; for *tranſient* read *permanent*.